The Builder.

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ILLUSTRATIONS.

Decoration for Smoking-Room.—Designed by Mr. T. Wallace Hay ..... *Double-Page Ink-Photo.*

Selected Design for West Riding County Council Offices, Wakefield.—Messrs. Gibson & Russell, Architects ..... *Two Double-Page Ink-Photo's.*

Wayside Notes in East Anglia; Sketches at Clare, Hawkedon, and Poslingford.—By J. S. Corder ..... *Double-Page Photo-Litho.*

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Architecture at the Royal Academy.

THE collection of drawings in the Architectural Room at the Royal Academy shows no sign of any departure from its usual character—an assemblage of pictorial perspective views, mostly unaccompanied by plans, and affording little opportunity for the study of architectural design in any serious fashion; while the recurrence of the same hand and style of execution in several of the leading drawings bearing different names, tells emphatically of the extent to which this is essentially a draughtsman's exhibition. The improvement in the selection and method of hanging under the management of an architect, as compared with last year, is pretty obvious; there are few drawings which have not a fair right to their place; some exhibitors who have been very favourably dealt with in the last year or two are reduced to their proper proportion of representation, and some drawings which were ignominiously and unexpectedly returned last year, to the surprise of others besides their owners, are found occupying favourable places this year. We have no means of knowing whether the same apparent caprice is met with in the hanging of pictures, but it is certainly curious in the architectural department to find that drawings which in one year are abruptly dismissed with the fatal cross, are found the next year holding honoured positions on the wall. This year, however, we have no reason to believe that any just complaint can be made of the hanging. The reasons which prevent the Architectural Room from being a satisfactory department of the exhibition are chronic, and must exist until there is more space allotted to architecture and its auxiliary arts, and until a desire is shown to favour really scientific representation of architectural design instead of mere attractions of draughtsmanship. The desire may exist in some quarters already, but the space for realising an exhibition on such lines is absolutely inadequate, and small perspective representations are mostly all that can be found room for.

The illustration of the class of public, that is, State or municipal, buildings, is rather emphasised this year, as some of the results of several important competitions for buildings of this class find place on the walls. The most important of these in point of size is Mr. Henman's view of the "New General Hospital, Birmingham" (1,578), one of the best also in other respects, though the want of a plan in the case of such a building as this is really what we may call an almost criminal neglect, as implying that a hospital may be judged merely as a piece of architectural grouping, independently of its suitability to its purpose. The drawing, in pen line and by a well-known draughtsman who appears to have this year executed nearly all the largest drawings in the room, shows a building occupying three sides of a quadrangle, with wings returned towards the spectator. The effect of the large octagonal turrets, with conical roofs, at the re-entering angles, and the smaller but somewhat similar ones at the angles of the projecting wings, is fine and effective, though as to the part which these features have in the plan we are left quite in the dark. An open arcade at the upper end of the quadrangle connects the wings and the centre with a triangular carriage porch formed at the entrance by turning out two of the bays at an angle of 45 degs., to meet on a pier opposite the centre of the door; affording, however, we should imagine, rather a tight fit for the carriage. In general, the building is far more picturesque than most hospitals are, and there is no reason to suppose, in the absence of the test of a plan, that the hospital has suffered practically on account of this.

At the west end of the room we have, hung one over the other, drawings of three of the competition designs for the completion of the South Kensington Museum, those of Mr. Emerson (1,618), Mr. T. Manly Deane (1,619), and Mr. W. Young (1,620). The first-named is a very dignified and powerful looking design in a rather mixed style; the minor details are of Renaissance character, but the circular turrets at the angles of the projecting wings give a certain degree of Gothic character and outline to the whole. The building is treated, as are both of the others, with a recessed centre, over which is a rather small dome, not large enough in any way to dominate the design; probably the requirements of the plan could hardly have afforded opportunity for a large dome; but none of the three designs have plans appended; their interest and value would be doubled if they had. In Mr. Emerson's design the ground story is treated very plainly with continuous rustication and square-headed windows; on the principal story the window spaces have circular arched heads springing from coupled columns, but the tympanum of the arches is filled up and decorated with sculpture. There is an evident attempt to assimilate the building with the existing completed portions of the museum in regard to smaller details, but in its general appearance it is rather at variance with the *genius loci*, the result mainly of those rather military-looking circular turrets. Mr. Deane's design, less striking in some respects, has the merit of being remarkably well fitted to its situation and surroundings. It is an eminently terra-cotta design in character and detail; we do not say that is an absolute merit, but it is one relatively to the situation. The general impression it conveys is somewhat similar to that of the Spanish type of architecture known as *plateresque:* the main features which break up the façade are lofty panelled pilasters running through two stories, and carrying elegant baluster-like columns or colonnettes on the upper story: the whole very profusely ornamented. If there is somewhat too much of the look of furniture-design on a large scale in all this, it is at any rate graceful and rich in effect. The author of this design also employs a recessed centre, with (as in the last-mentioned one) a screen across the space thus left; but he does not introduce either a central cupola or a flanking tower; the main lines of the building are horizontal, and though of course this means

a loss of effect to some extent, there is some merit in the attempt to show that a building of this class may be designed so as to look pleasing and satisfactory for its purpose without the introduction of features which are not practically called for. The employment of a concave outline (on plan) at the angle of the building, apparently for the purpose of introducing a fountain as an object on the centre of the curve, is piquant, and the fountain is a pleasing incident; but the treatment gives rather a weakness of appearance to the angle of the building, nor can one imagine that it would work out well on the interior plan; but this we are not allowed the opportunity of seeing.

On the opposite wall to this is a perspective view, apparently by the same hand, of the accepted design for the Glasgow Art Galleries (1,526) by Messrs. Simpson & Allen; again without a plan. This is a very fine and picturesque group of buildings; especially good is the effect of the front pavilion, as it may be termed, raised over the main entrance and its steps, and standing in front of the central mass with its two towers, which fill up the background. The drawing being in pen line, no indication of material is given; it might be executed with either terra-cotta facing or stone, which implies that it has somewhat of the character proper to the former material, The wall space on the wings is divided up by flat pilaster-like projections, between which are square-headed mullioned windows in the lower part of the space, with cornice and slight pediment over them, and the space above this occupied partly by a wall-arch enclosing sculptured decoration; a small continuous colonnade over gives horizontality and binds the whole together. The defect of the building as a whole perhaps is that it is rather too much cut up in outline, with the result of some deficiency of repose; but altogether it is a fine and original piece of architecture, of which both its architects and the city for which it has been designed may be proud.

Messrs. Aston Webb and Ingress Bell exhibit a drawing of their New Police Offices at Birmingham (1,603), which forms part and parcel of the design of their Law Courts, filling up what may be considered a portion of the same site. That the same architects should have been employed to carry out a building which architecturally must have been so closely connected with their first and larger one was only right, but it is not the less to the high credit of some of the Birmingham architects that they should have recognised this and warmly urged it in the local press. The design is completely a continuation of the Law Courts design, the left-hand gable of the latter forming (in appearance) the right wing of the new building, balanced by a new gable treated symmetrically with it, and the same window treatment being continued in the new portion. The whole makes one design now, and the addition of the new building has the advantage of doing away with the awkward and unfinished look of the original termination of the Law Courts building, with its end wall askew (following the line of the original site). Let it be noted that a plan is appended. The same architects send also, in one frame, three drawings of their new building for the United Service Institution (1,602), adjoining the Banqueting House; two small perspective drawings showing the fronts towards Whitehall and Whitehall gardens, and a large geometrical elevation of the Whitehall front; again setting the good example of adding a plan. They have wisely avoided any correspondence, in their elevation, with the lines of the Banqueting House, so as to leave its individual architectural character untouched; the new building is kept rather lower and none of its architectural features range with those of the old one, although it is sufficiently in keeping with the latter in general character, being of symmetrical Classic type, and plain and simple in treatment. The window treatment in each story is, however, effectively varied, and the whole makes a very satisfactory elevation. The pleasantest bit of the design, however, is the treatment of the semi-circular exterior of the lecture theatre on the Whitehall-gardens side, with its two tiers of elegantly treated windows, contrasting effectively with the space of blank wall above them. This is a very delicate architectural task, considering the close connexion of the new building with a very famous existing structure, very successfully carried out.

The system seems to have been adopted in this year's hanging of grouping together as much as possible designs by the same architect or designs made with the same object; an arrangement altogether to be commended. Thus, we have Messrs. Webb and Bell's two large works together; we have three designs for South Kensington Museum hung all together; and again we find two designs for Oxford Municipal buildings hung one over the other; the accepted one by Mr. Hare (1,590), and one of those in the second competition (1,588, 1,589) by Mr. E. Rüntz. Mr. Hare's design has been improved in some respects since the competition, in the treatment of the upper portion of the wings, and in the greater emphasis given to the main entrance, and looks a very satisfactory design for its place and purpose, though it is not quite done justice to in the clever and careful but rather heavy water-colour drawing by which it is illustrated. In this respect Mr. Rüntz has an advantage, for he has sent a beautifully executed water-colour perspective of his design, which gives it every advantage that drawing can give; and though it is what may be called rather corrupt and perhaps eccentric in detail (in which quality it is kept in countenance by some of the old Oxford buildings), it is nevertheless a very picturesque design, especially in regard to the treatment of the massive square central tower with its small circular cupola connected by buttresses to the angles of the tower. The windows seem rather isolated in the design, which wants connexion in this sense, but is picturesque as a whole. The author sends also his geometrical line elevation submitted in the competition. No plans are given of either, by which omission again Mr. Hare suffers, as his plan was a quite exceptionally good one, and the same could not be said of the other design.

Mr. Collcutt's "Staircase of the Imperial Institute" (1,586) is an effective brush drawing in Indian ink, showing a fine solid interior effect, with considerable originality of treatment. An order of dark marble columns is introduced at the sides, between round arches, and the principals form arches springing across the hall, the spandrels being filled with vertical and horizontal bars with open space between, and finishing in a small arcade, but it is not very apparent from the drawing of what material these principals (if they are to be so called) are made; they are coloured dark. The ceiling is divided out into large compartments by soffits, one of which rests on the principal: a good deal of ornament is introduced in the panels. The effect of the whole is solid and rich, without being over-elaborated.

Mr. Waterhouse's two contributions are hung together, "New Premises for the National Provincial Bank of England, Piccadilly" (1,498), and "Head Offices of the Refuge Assurance Company, Manchester" (1,499). The Bank is a very bank-looking building, the walls divided by massive rusticated pilasters running up the greater portion of the height, and subdued in the attic into flat pilasters with a monogram ornament; the windows are grouped between these, the ground floor ones, as required in a bank, have a very large lighting area filling up the space between the piers, and strengthened by stone mullions and transoms, not however of Gothic type. The balustrade is decorated with panels with oblique crossbars, something like a feature employed in Roman architecture in a similar position and the piers terminate in massive gilded finials. The entrance is at the angle, as also in the other building, the Refuge Assurance, where however the canted angle develops above into an effectively designed spirelet. A solid mass of wall is preserved near the angle of the building, on both faces, which seems to form a pier to support the remaining portion of the walls, which are largely cut into for window space. Both these buildings are shown in very powerfully executed water-colour drawings in Mr. Waterhouse's well-known style; as architectural drawings they are the most solidly-executed things in the room.

A perspective view of the proposed British Art Gallery (1,582) is given a central place, rather we may presume in regard to the importance of the building than to its architectural treatment, for which we fear there is little to be said; but as Mr. Tate is presenting the building we presume we must not look a gift horse in the mouth, though we cannot but regret that such an opportunity for making the casket for English works of art a work of art in itself should have been thrown away. Mr. Belcher sends a tinted sepia geometrical elevation of the library and council chamber of the Institute of Chartered Accountants (1,513), a portion of which, the Council Chamber, was illustrated in our "Jubilee" issue for January 7 of this year. It is a plain-looking classic room with a large order of columns, and a lantern over with a small order; the representation of the painting in the centre of the wall is rather too solid to keep its place in the drawing in comparison with the portions which are really in relief. We perceive, however, from comparing it with the plan annexed, that this picture is really a representation of the room in perspective, and is therefore perhaps purposely executed with more than pictorial precision in order to supply the place of a perspective view, though peopled with figures of another date than the present. The design is a good specimen of simple and dignified treatment of an interior on classic lines.

Messrs. Roger Smith & Son send an elevation (1,511) of their competition design for the Northampton Institute, which appears as far as one can judge to be a suitable and not ineffective treatment for a building of that type; but while we are always glad to see geometrical drawings forming part of the Academy architectural exhibition, it is even more necessary than in the case of perspectives to have plans to accompany and explain them, and we cannot see the use of sending such drawings without a plan. The same remark applies to Messrs. Morris & Hunter's elevation for the Glasgow Art Galleries (1,526), of which it is impossible to form any judgment in the absence of a plan.

Three drawings of public buildings by Mr. Mountford are hung together. The "South-west angle of the Sheffield Town Hall" (1,516), is a broadly-executed washed drawing in indian ink of a portion of this building, with the character of which all our readers are pretty familiar. The Battersea Town Hall (1,523) is a simply treated and solid looking classic building of somewhat Queen Anne type, but with a special character of its own; the slightly projecting wings are rounded off at the angles, giving a very solid effect; the basement is treated very plainly with rusticated window dressings; in the wings the windows here are semi-circular arches (with a slight stilt) springing from the surbase line. An order is introduced in the upper story, with broken pediments on the wings and over the centre window of the recessed portion, and a projecting semi-circular porch gives an agreeable relief to the otherwise rather severe lines of the design. Altogether this, though a plain and unpretending building, is a very satisfactory one for its purpose as a municipal building of the smaller class. Mr. Mountford's perspective view of the Northampton Institute building (1,524) was published in our illustration pages for April 15, and is a design worth attention for its picturesque and original treatment, while preserving the practical sobriety of style proper to a building of this class; the treatment of the buttresses along

the front wall, Gothic in feeling but not in detail, is very effective; the upper part of the tower might be capable of improvement, without losing its picturesque character, and we should certainly recommend a reconsideration of the design of the projecting clock bracket, which looks too much like a small detail magnified. Mr. Mountford exhibits also a drawing of the east side of Battersea Town Hall.

Mr. Deane's competition design for the Glasgow Art Galleries (1,533) is a powerful group, but rather fails in architectural expression for a building with such a purpose; the bastion-like effect of the large pavilion towers with their round turrets suggests rather a military building, or an idea for a Gothic railway station.

Messrs. J. Burnet Son & Campbell's Glasgow Athenæum (1,555) is a very original front, shown in a clear and powerful pen drawing. The treatment of the right-hand portion, evidently the staircase, seems a little heavy and rather crushes on the doorway. In the other portion the windows of three stories are cleverly combined into one feature architecturally, while keeping the separation of stories quite distinct; the lower part of the projecting bay which they form is recessed within the outer plane of the wall, the upper part appearing as corbelled out from and carried by it. This front may be accused of being a little heavy in detail, but it has plenty of character and has been very carefully worked out.

There are many other designs, some of them of great merit, which we will notice in turn, but we may go out of the way to call attention to Mr. Jackson's drawing for the repair of St. Mary's, Oxford (1,559), and the reconstruction of the pinnacles, which is a matter of considerable public interest at present. A drawing is subjoined on the same sheet showing the pinnacles as restored in 1852 from Mr. Buckler's design. The new design reduces the height of the pinnacles; in fact it appears probable that Buckler superinduced a second stage of pinnacle on what were probably the original proportions of the mediæval ones. Mr. Jackson strikes these away, replacing them by crocketted spirelets rising from the lower pinnacles. This will slightly alter the outline of the spire as it has been familiar to the Oxford eye for the last forty years, but there is no doubt that it is an improvement in the balance of the design, and more like the tower as originally built, and Buckler's additional pinnacles have no archæological value.

We may conclude this notice by remarking that the general effect of the Architectural Room this year owes something, in a decorative sense, to the large and effective coloured design for a frieze by Mr. A. Gwatkin, which, with some smaller designs by the same hand, makes a fine show at one end of the room, and is a very good example of the conventional treatment of foliage for coloured decoration.

WORKING MEN'S COLLEGE, GREAT ORMOND-STREET.—Last Saturday was, according to the late J. O. Halliwell-Phillipps's "Outlines," the anniversary of Shakspeare's birth. It formed an appropriate occasion for the delivery at the College of a lecture upon "Elizabethan London," by Mr. T. F. Ordish, F.S.A. (formerly editor of the *Antiquary* and of the *Bibliographer*), in which he dwelt mainly upon the London theatres and dramatic performances of that time. His paper, illustrated with lantern-views of old maps, the Bankside playhouses, &c., was highly appreciated by a large audience. One view reproduced a drawing of the interior of the "Swan," from a MS. by Arend van Buchell (1596), found five years ago in the Utrecht Library, by Dr. Gaedertz.

THE SANITARY INSTITUTE'S EXAMINATION FOR INSPECTORS OF NUISANCES.—At an examination for Inspectors of Nuisances, held in London on April 14 and 15, 153 candidates presented themselves as Inspectors of Nuisances. Questions were set to be answered in writing on the 14th, and the candidates were examined *vivâ voce* on the 15th. Sixty-five candidates were certified to be competent, as regards their sanitary knowledge, to discharge the duties of Inspector of Nuisances.

NOTES.

THE Employers' Liability Bill passed the second reading without a division on Tuesday last. It cannot be said that the final discussion threw additional light on the subject. It was perhaps most remarkable for the fact that Mr. Forwood, a prominent member of the Conservative Party, supported the amendment of Mr. Chamberlain, by which the employer would be made liable for accident caused by workmen in his employment, even if no negligence were proved. For good and all, therefore, by this Parliamentary proceeding, the doctrine of common employment has gone for ever, and employers must make the best of the situation. We can only hope that the pessimistic forebodings to which some employers give vent will be falsified by the event, and that workmen will not endeavour fraudulently to make capital out of the Bill when it becomes law.

SOME of our readers will probably be interested to know that a few of the plants from the coal measures found in the Dover boring are now on exhibition in the "Fossil Plant Gallery," at the Natural History Museum, South Kensington. They were presented to that establishment on Saturday last by the Engineer, Mr. Francis Brady, together with portions of the solid cores. The fossil plants in question prove that the Dover coal at present struck is on the horizon of the upper part of the middle coal measures, so that there is every probability of the occurrence of other productive seams lower down. The specimens were obtained from two horizons, viz., 1,262 ft. and 2,234 ft. from the surface of the ground, and are similar to those identified and reported upon by M. Zeiller, the well-known French palæobotanist, in the *Comptes-Rendus* of the French Academy of Sciences last year (vol. 115, pp. 626-629). Ever since the first report of the discovery of coal at Dover the public has demanded the production of the "fossil evidence," and although no doubt could possibly have been entertained by anyone who had carefully studied the scientific aspect of the question, it is satisfactory now to have that evidence placed in a prominent manner in such a public place as the Natural History Museum.

THE Bishop of London has appointed a Commission to inquire into the expediency of uniting the City parishes of St. Edmund the King and Martyr, and St. Mary Woolnoth. Each of the two churches has been threatened before; the latter by the City and South London Railway (Islington extension) Bill of 1890-1; the former under a previous Commission, issued four years ago, for the union of St. Edmund and All Hallows benefices, together with the parishes already united with them.* We expressed at the time a hope that the tower, at all events, of St. Edmund's would not be sacrificed. It carries a leaden octagonal lantern—in the opinion of many one of the most pleasing of Wren's designs—its cornice supported by brackets on the angle piers, above which are placed flaming urns. From the lantern rises a concave octagonal spire surmounted by a pedestal, with finial and vane; the total heights being about 135 ft. The church itself is notable as being that wherein "Joseph Addison, of Bilton, in the county of Warwick, Esquire, was married unto Charlotte, Countess Dowager of Warwick and Holland, of the Parish of Kensington, on the ninth day of August, Anno Domini, 1716, by me, Mr. Nathaniel Hough." Of the interior of St. Mary Woolnoth, as remodelled by Mr. Butterfield in 1876, we published, together with a description, on May 28 last, a two-page lithograph illustration from a monochrome water-colour drawing by Miss A. Fooks.

* *Vide* the *Builder* for July 6, 1889 (paragraph); and May 18, 1889, and August 17, 1889 ("Notes

FROM the *Ἐσπερία* we learn that the new campaign at Troy begins this week—the funds for the expedition are entirely provided by Madame Schliemann—and Dr. Dörpfeld has already started. It is intended to make a thorough investigation of all points at which the previous work was prematurely suspended, and it is hoped that the present excavations will be final. The excavations will begin on the fifth stratum, or "city," as Dr. Schliemann used to call it. This fifth stratum, it will be remembered, is supposed, from the fragments of vases found there, to have close analogies to the civilisation of Mycenæ. Some of the grave mounds near to Troy will now be investigated. Dr. Dörpfeld is accompanied by several members of the German School of Archæology at Athens, and these gentlemen have promised to "personally conduct" all professional visitors to the site during their stay there. If any one wants the epoch discussed by Homeric questions *in situ* they should lose no time in starting for Hissarlik. The English school, we may add, begins next week its work at Aigosthena, where substantial remains are still above ground. It is remarkable that remains so obvious should so long have remained uninvestigated. Pausanias records (1-44) that a temple of the Seer Melampus existed there in his day.

WE hear from Munich that Dr. Heinrich Brunn, the aged Winckelmann of our century, is engaged in a great history of Greek Art. That the man who half a century ago, wrote the still standard work, "Die Griechischen Künstler," should now embark on the monumental side of his subject, is a striking testimony to vitality. Whether at his age he can possibly cope with the vast mass of additional material that has accumulated we must judge later. It is a curious evidence of the intentional blindness of Germans to what is doing in France, that with M. Perrot's book before their very eyes, the German publishers state that no comprehensive work on Greek art in its entirety, as opposed to sculpture alone, now exists. The book is to be copiously illustrated.

THE mosaic decoration of the dome of the Greek church at Bayswater, which has been recently carried out, forms one of the most important pieces of interior church decoration in London. It is carried out in accordance with that Byzantine tradition which the late Mr. Burges, with much less reason, proposed to introduce into the interior of St. Paul's; a colossal figure of Christ forming the central part of the scheme, surrounded by figures of the Apostles on a smaller scale. Where this method of pictorial treatment is applied to an apse, the colossal figure naturally rises in the centre of the back of the apse, and faces, like the subordinate figures, towards the centre of the plan. Here, in applying the decoration to a central dome, Mr. A. G. Walker, the artist who designed the work, has adopted what is perhaps the only or, at all events, the most effective treatment that can be employed, viz., placing the colossal figure in the centre of the dome, hovering over the central space and as if looking down from it; the apostolic figures being ranged round the lower part of the dome in the usual nearly upright position. The drawback to this treatment of the central figure is, of course, that which is common to all horizontal ceiling paintings of figures, that it is seen upside down, more or less, from one side of the floor. In a decorative sense, however, it has a more impressive effect in this position than it could have had in any other. Of course the colossal figure more or less dwarfs the scale of the dome, but it is in accordance with the traditions of Greek church symbolic decoration, and must therefore be criticised from that point of view. The figures are treated in a sufficiently severe style to harmonise with the general style of the

building and (again) with the Byzantine tradition, though not reproducing the archaic character of Byzantine mosaic, which, impressive as it is in its place in ancient buildings, would be an anachronism in a modern one. The pendentives of the dome are decorated with figures of cherubim, one in the centre of each pendentive; these and the dome figures being relieved on a plain gold ground. The mosaic work has been carried out by Mr. Mecenero from the designs and cartoons of Mr. Walker.

A CATALOGUE of the casts on sale in the National Museum at Athens has just been published in Greek, under the auspices of the Antiquities Department, and edited by Mr. Kabbadias. It should be of great service to all other European museums and also to the many universities, schools of art, &c., who are now forming museums of casts. All credit is due to Mr. Kabbadias for the promptness with which he has had all available new discoveries cast, *e.g.*, those at the Heraeion of Nigos and the sculptures by Damophon found at Lykosura. Epidaurus, too, has received full attention. Hence the book serves, not only as a register of casts for commercial purposes, but also as a scientific guide to the recent additions to the Athenæum collections, wherever the work of art in question has been already published a reference is added. Side by side with the catalogue of casts appears also the first volume of the catalogue of original marbles. Visitors in past years to Athens will remember that in 1886-1887 there appeared the beginning of such a catalogue, but so fundamental have been the changes, so frequent and extensive the additions to the National Museum, that Mr. Kabbadias has had to put in hand an entirely new work. The museum was completed in 1889, the bulk of the funds having been contributed by the wealthy Greek, Bernadakis, while the Government contributed 800,000 drachmas. The discoveries in the Acropolis are, of course, still kept distinct; as it is, the present catalogue describes 1,044 works of art, of which 125 are archaic. The book is supplied with an excellent plan, and with short introductory notice of the chief periods of Greek art. Another interesting feature is a history of the getting together of the collection, illustrated by a reproduction of the first MS. catalogue of the old collection of antiquities at Ægina.

THE splendid first volume of "Monumenti Antichi," published by the Academy dei Lincei of Milan, is chiefly devoted to the report by Messrs. P. Orsi and Sav. Cavallari on their excavations at the site of Megara Hyblæa, in Sicily. Megara Hyblæa, it will be remembered, was destroyed by Gelon in 483 B.C.—the height of its prosperity fell in the seventh and sixth centuries B.C.—hence among the hundreds of vases discovered only one is of the red-figured style. Upwards of 400 graves were opened, and these of the most diverse kinds. Some children's graves were discovered containing each as many as eighty tiny vases entirely covering the body of the child. No arms are found in any of the graves, and but few objects made of metal. The style of the vases found shows the closest connexion with the mother-city, Megara—the so-called proto-Corinthian. Corinthian, black-figured and bucchero vases occur in large quantities, and a good many very rude vases of local fabric. The find in inscriptions is quite insignificant, and the only sculptural work of importance, now in the Museum of Syracuse, is a female head of fine-grained limestone, obviously a local work of art.

ACCORDING to the *Rundschau für Geogr. u. Stat.*, a buried town has recently been discovered at the foot of the volcano Agua about two miles to the east of Santiago de los Caballeros, an important town of Guatemala. Excavations were undertaken at the instance of the owner of the site, Don Alvarado, he having previously found certain articles much resembling the household utensils in use among the aborigines at the time of the discovery of the New World. At depths varying between 6 ft. and 16 ft. the workmen brought to light a large number of household utensils (including engraved and painted vases) weapons and articles of personal adornment, amongst which were many necklaces of precious stones. The vases were found to be decorated with well executed drawings, and with inscriptions in hieroglyphics. There were also discovered some statues in black basalt, remarkable for their execution if it is to be assumed that only stone tools were used on them, there being no trace of metal implements of any description in the excavations. The ruined walls of tenements were met with at a depth of about 5 ft., and on a level with the foundations of these houses numerous human skeletons were discovered.

THE building stones of Indiana have recently* been reported upon by Mr. Maurice Thompson, ex-State Geologist, from which it appears that the principal materials in the State are limestones and sandstones. There are no granites, slates, nor marbles in Indiana. The "oolitic" limestone is said to be the most valuable; "its strength is sufficient to safely sustain a structure, properly designed and systematically constructed, one half-mile or more in height"! The oolite of the St. Louis group is said to be the best limestone yet met with in America. We cannot discover why the author calls it "oolite," however, for we learn that it consists entirely of minute shells or fragments of shells, cemented together by carbonate of lime. A State Geologist should be more careful in his nomenclature, for the structural (and hence weathering) peculiarities of an oolite are very different to that of a shelly limestone. We wish we could believe the author's statement "That in . . . England . . . in cities where large quantities of sulphurous coals are burnt, the oolitic limestone has withstood the sulphuric acid of the fumes without the slightest damage." Durability in a building stone, says Mr. Thompson, includes every quality tending to make the material lasting and unchangeable after it is laid in a structure. "Hardness, elasticity, tensile strength, power to resist the greatest crushing force, imperviousness to water, and invulnerability to the attacks of air and its corrosive and disintegrative burdens, are some of the qualities that should be possessed by a good stone, but not all. Evenness and homogeneity of composition, unity of substance, so to speak, and the power to resist extremes of heat and cold are quite as necessary." Referring to the selection of sandstone for building purposes, he remarks that the substance of the rock will often show unmistakable evidence of inequalities of structural composition, such as horizontal cavities caused by the weathering out of seams or streaks, that, on account of bearing too much iron, have oxidized and crumbled away. Such stones should not, of course, be selected, yet we know they are commonly found and used in certain parts of England. In regard to limestones, he states that they are much more injuriously affected by hidden faults of composition than are sandstones, and for this reason they demand a much more careful examination—a remark which we fully endorse. Altogether Mr. Thompson's report seems a good one; there is much in it that applies to building stones in general and not to Indiana stones in particular, and this makes it more widely useful than would otherwise be the case. It would have been considerably improved, however, if the author had not adopted the too prevalent American style of claiming that almost everything which came under his purview in the State was "better," "bigger," "stronger," and "greater," than it was anywhere else. Such "high falutin'" nonsense might do very well for a stone-merchant's circular, but it is out of place in a scientific work, issued under the authority of a State Department.

* "Indiana: Department of Geology and Natural Resources," 17th annual report, pp. 19 et sqq.

THE fatal disaster at Kilburn, occasioned by the fall of a quantity of corbelled-out brick and cement coping, is a form of accident (if accident it can be called), to which the public are far more exposed than they are aware of. The carelessness and want of workmanlike skill and precaution with which overhanging cornices are frequently built is matter of common knowledge to those who pay attention to the habits of builders; and there are probably many more cornices which are just near the point of danger of falling, and which stand more by good luck than by care in building. Even in a first-class building under the conduct of an architect we have seen lengths of heavy stone cornice on a building in progress, with so little wall-bearing in comparison with their projection that it would have taken very little to tip them over. As it is perfectly possible to make all such projections safe, and the failure to do so results either from want of proper skill and knowledge, or from an effort after undue economy, it appears to us that a verdict of manslaughter against the persons responsible for such dangerous cornices (if they can be got at) would be perfectly justifiable, and would be a wholesome lesson to unconscientious or incapable constructors which would probably not be forgotten.

THE appointment of Mr. Harrison, the principal Goods Manager of the London and North Western Railway, to be the General Manager, in place of the late Sir George Findlay, shows the great importance attached by the Directors to the goods traffic. Specialism is rigidly carried out in the large railways, and Mr. Harrison has hitherto had nothing to do with the passenger traffic. In these days it has long been obvious that the General Manager largely controls the policy of a railway company. He must be something more than a competent head of a department. It remains to be seen how Mr. Harrison will act in his new and important post; there is no doubt that he has great capacity for work and has all the details of the goods management at his fingers' ends. It is doubtful, however, whether he will take a sufficiently broad view of railway management, and whether in looking after the interests of the shareholders he may not forget the just demands and requirements of the public. A general manager must be tactful and conciliatory on occasions. At the present juncture these occasions are certain frequently to arise, and we should not be surprised if the traders and the public found Mr. Harrison a somewhat too obstinate opponent.

JUDGING from some correspondence in the *Standard* recently, some of the residents at Folkestone appear to be very angry with the authorities of that Borough for looking too well after its sanitary condition, and for presuming to send sanitary inspectors to houses, unasked, to inquire into their condition. One correspondent, "a resident of over twenty years," complains indignantly of the following enormities—that the authorities demand 14-in. outside walls for two-story buildings, though 9-in. walls are considered enough in London and elsewhere (we presume this gentleman is a speculating builder); that they disallow valve closets, and three-gallon flushing cisterns. If this latter charge means, as we suppose, that they do not consider three gallons enough, we can only say that the Folkestone authorities are right on all three points, and are in advance of their age in sanitary legislation; and the inhabitants ought to consider themselves fortunate in

living in a town so well looked after, instead of grumbling at the enlightenment of their rulers.

BERECHURCH HALL ESTATE, a property about two miles from Colchester, and in a parish known otherwise as West Donyland, which will shortly be offered for sale, once formed part of the demesne of St. John's Abbey, the great Benedictine house of that town, founded by Eudo the Dapifer, to whom is attributed the building of Colchester Castle. The monks gave Berechurch to Thomas Audley, who had been town-clerk of Colchester, and became Henry VIII.'s Lord-Chancellor.* The manor remained in the Audley family until the death, in the Fleet Prison (1714), of Henry Audley, whose widow gave it up to James Smyth, mortgagee. In the parish church of St. Michael, restored in 1872, are some monuments of the Audleys, including that of Sir Henry, erected in his life-time. Having been sacked during the civil war, the Hall was occupied as a farmhouse. About eleven years ago it was partly rebuilt, on the same foundations, and we understand that whilst the dining and drawing rooms are the only remaining apartments of the former house, some of its interior fittings, carved ceilings, and mantelpieces, have been preserved. Sir Robert Smyth, *ob.* 1802, was a patron of Fuseli, and made a collection of his paintings at Berechurch. This estate, which has belonged latterly to the late Octavius Coope's trustees, is watered by the estuary of the Colne, and has been estimated to return a total rent-roll of about 3,500*l.* per annum.

THE collection of water-colour drawings by Sir James Linton and Mr. Orrock in illustration of "Marmion" and "Rokeby" derives its chief value, to our thinking, from the beautiful landscape studies by Mr. Orrock, which form the larger part of the exhibition. These are so fresh and atmospheric in effect, so broad in style, and in such complete accordance with the best traditions of water-colour art, that they form an exhibition well worth a visit, quite apart from any special interest they may have as illustrations of the scenery of Scott's two poems. Among the finest are "Kelso" (5), with its river and bridge framed among masses of foliage, and the large picture of "Smailholm Tower" (12); "Wark Castle and the Tweed" (27), and "Holy Island from the Mainland" (48) are specially noteworthy for the fine treatment of the sky, and the small picture of "The Cheviots from Flodden Field" (46), with its delicate gleams of light on the hills, is one of the most beautiful in the collection. All, however, among these eighty examples of landscape painting in water-colour are masterly in style. Among other subjects are two of Twisel Bridge, two or three giving different views of that picturesquely-placed town Berwick-upon Tweed; several of Holy Island and Bamborough Castle; a fine view of Tantallon Castle, and a view of Edinburgh from the High School. Sir James Linton's works, fifteen water-colour drawings and a small oil-painting, include some examples of his very best work in regard to richness and harmony of colour and study of costume; in this respect we may especially name "Matilda" (59) and "Lady Heron and James IV." (63); but, unfortunately, as was the case with a previous exhibition by the same artist of figures, said to be an illustration of Scott's characters, there is little study of character in them, and they give the impression of being merely labelled with the names of characters for which the costume was suitable. The conception of "Marmion" (56), if it was really painted as such, is absurd. There are four studies named "Lady Clare," one of them being the oil painting before mentioned, but the faces are not those of the same person, nor did Clare, who occupies but a subordinate place in the poem, merit so large a share of illustration; the name is obviously only a convenient label for so many studies of heads and costumes; that of "Lady Clare the Novice" (62), the only character in which Clare appears in the poem, is the only one which justifies its title. Of the rest "Constance as Marmion's page" (54), the best of the set in point of invention and character, and "Bertram" (67), are the only two which gave one any idea of having been deliberately studied to represent the characters they are named after; and when we are told that pictures are intended as illustrations of such and such characters we do expect to find a definite attempt to realise the character, and not a mere costume picture, however fine in colour and picturesque in design. The sketch for a picture of the trial and sentence of Constance (66), the most impressive scene in the poem, looks as if it had the making of a fine and effective work, and is really an illustration of the poem, and we shall hope to see it in some future exhibition in its finished form. The other sketch for a picture, "The Spectre Knight and Marmion" (55), is wrongly named, as the knight was not a spectre; it was only that Marmion's heated imagination took him for one for the moment; another reason for thinking that Sir James Linton illustrates Scott without taking the trouble to read him.

* Vide the *Builder* of June 28, 1890. "Audley End and Saffron Walden."

THE small exhibition of the works of Calvert at Messrs. Goupil's new gallery in Regent-street does not seem to have attracted the public much, though one would have thought that the important place given to his works at the last Burlington House Loan Exhibition ought to have sufficiently called attention to the exceptional interest of his works. It is true that the collection at Goupil's does not give so favourable an idea of him as that at Burlington House, where naturally most of the best examples were secured first, and the Goupil exhibition professes to limit itself to works not previously exhibited. This is not quite the case, as the frame of small engravings was at Burlington House as well as (we think) one or two of the smaller of the oil studies. The works exhibited show the same general characteristics as those already known; a peculiar and very original scheme of colour, a vivid poetic fancy, accompanied often by very careless drawing. Among the finest are the "Sacrifice of Iphigenia" (13); "Cyrene" (5) a beautifully designed draped figure seated in a landscape; a chalk drawing of two figures called "A Silician Pastoral" (28), and a beautiful figure of a "Recumbent Nymph" (31). A curiosity of the collection is a seated figure (25) described as "Reading of figure in Etty's 'Garden of the Hesperides,' transferred by Edward Calvert into his own system of colour"; in which Etty's realism in the treatment of the nude is replaced by an entirely abstract system of colouring, removing the figure into a totally ideal world. Whether the copy represents the drawing of Etty correctly may be much questioned. A little illuminated picture of "A Primitive City," very minutely executed, is very curious, and has an interest of its own; both in conception and execution it is quite unlike anything else in the collection. On the whole, Calvert may be said to have been a dreamer of beautiful fancies in painting rather than a painter in the full sense; his conceptions are exquisite, but he seems to have wanted either technical power or energy to carry them out fully, except in the case of his little engravings, which are executed with the minutest care; the oil paintings are rather visions of possible pictures than completed works, but they have a great interest of their own.

A VERY fine collection of Nankin blue porcelain is at present on view at the Fine Art Society's Gallery in New Bond-street, partly on sale, and partly the loan collection of Mr. Orrock, the water-colour artist. We are not of those who take a collector's view of blue china, and value it for the completeness of the set or for a special colour, though the purity of the blue is no doubt an element of artistic value. But porcelain of this class has the merit of for the most part showing better designed outline than many types of pottery which are run after, and not unfrequently the surface design is also of a fine and noble artistic quality, though collectors make little distinction in this respect, and are as ready to pay high prices for pieces with poorly-designed ornament and grotesque figures, as for those which are really fine examples of pattern design. Among the work on view in Bond-street the best things artistically in the sale collection are the large jars in the lower part of the centre case—a very fine set both in colour, form, and decorative detail—and the four circular plates on the top row of those at the side of the room. These latter are superior to most of those that accompany them, as a matter of design, though we doubt if they will command any better price on that account. To a typical collector blue china is blue china, and is all supposed to be *ipso facto*, artistic, independent of any consideration of design.

AN interesting exhibition of Nepal and Thibetian brasswork has been opened at Messrs. Howell & James's premises in Regent-street. The objects have been consigned to Messrs. Howell & James by a resident in India, who has collected them as opportunity offered from time to time. The origin of most of the pieces exhibited are the temples at Goorkha and around Katmandu, and there is little doubt that they are the proceeds of extensive robberies of temples by natives at times of local disturbance. Many were also purchased from Thibetian horse and sheep dealers. The objects are interesting from their associations, and many of the vases and lamps displayed are very graceful in form, with refined decoration. Hanging lamps, vases, incense burners, water-bottles, ink pots, and bells are amongst the objects shown. The exhibition will well repay a visit.

THE Paris Salon (the old Salon, at the Champs Elysées) though nominally opening always on the 1st of May, will be open to the public this year on Sunday April 30, at a charge of two francs. The Champs de Mars Salon is to open on May 10, closing on July 10.

SCHOOL FURNITURE.—Mr. John Heywood, of Deansgate, Manchester, has erected a large factory for the manufacture of school and church furniture. The manufactory is fitted with the most modern labour-saving machines.

WORKS BY THE LATE MR. R. HERBERT CARPENTER.—The following works by the late Mr. R. Herbert Carpenter have been illustrated in the *Builder*, those preceded by an asterisk having been designed and carried out by him in conjunction with his partner, Mr. Benjamin Ingelow:—Church of St. Mary, Crown-street, Soho (*Builder*, October 2, 1875). Design for proposed new Cathedral for Manchester (March 11, 1876). *Enlargement and alteration of Knoyle House, Wilts (January 31, 1880). Sketch of Leon Cathedral, Spain (May 29, 1880). *St. Oswald's School, Ellesmere, Shropshire (May 8, 1880, and December 27, 1884). *Stoughton Grange, near Leicester (May 29, 1880). *New Buildings, The King's School, Sherborne (September 3, 1881). *Tomb of Mr. and Lady Mildred Beresford-Hope, Kilndown Church, Kent (May 6, 1882). *Reredos in Lady Chapel, Chichester Cathedral (September 16, 1882). *Tower, St. Mary's Abbey, Sherborne (May 31, 1884). *Additions to Jesus College, Cambridge (September 3, 1887). St. Chad's College Chapel, Denstone (January 28, 1888). *Choir, Worksop Priory Church (July 14, 1888). *The "Abbey House," Sherborne (October 20, 1888). *Completion of Chancel, St. Paul's, Bedford (September 28, 1889). *West Front of the Cathedral, Honolulu (November 2, 1889). *Interior, Armagh Cathedral (September 27, 1890). Suggestion for Addition to Westminster Abbey (January 10, 1891). *St. Cuthbert's College, Worksop (January 30, 1892).

ORIENTATION OF CHURCHES.

A GLANCE at a map to a good large scale soon shows that very few, if any, old churches are placed at all true to the Cardinal points of the compass, and the theory put forward in solution of the observed facts that old churches were set out so that the east end should face directly towards the position of sunrise on the day sacred to the name of the Saint to whom the church was dedicated has either been tacitly accepted as a possible, and certainly poetical solution, or hastily set aside as not proven, without the systematic collection of evidence necessary for absolute proof or refutation. This may be due to the labour and research involved being disproportionate to the results to be attained should the key to the varying deviations be ultimately found; but to render the path of investigation easier and more generally accessible we give a table of the horizontal angles of sunrise measured in degrees north and south of true east, for three different latitudes, 50-53 and 56 north, thus covering England from the Lizard in the south, to Berwick in the north; as regards times, four centuries are given, commencing with 700 A.D. down to 1700 A.D., the latter century given both for the old and the new style. The generally-recognised Saints' Days are given, and will be found to be sufficiently close together to enable the reader to interpolate any other days accurately enough for all practical purposes. With this end in view, the days have been arranged consecutively, and not in alphabetical order. Intermediate latitudes and centuries may in like manner be found by interpolation.

The subject of orientation has recently excited some interest in our pages, and, if proceeded with, it should be systematically and upon an extended scale. A few suggestions, therefore, may not be out of place.

Taking latitude 53 N., it will be found that the horizontal angular distance of sunrise north or south of east exceeds 28 deg. on exactly half the days of the year, and as it is probably safe to assume the Saints' Days are fairly evenly distributed over the various days in the year, a considerable, if not a like, proportion of observed deviations should be found with an angle also exceeding 28 deg. Another field also opens itself for consideration as soon as the movable feasts are examined: a list of angles is appended to the main table for three of these days; from this it will be seen again in latitude 53 deg. N., Easter Day covers in A.D. 1000 all the angles from about 5 deg. N. to 25 deg. N., and Ascension Day, in like manner, those from 28 deg. N. to 44 N. Now should further evidence produce any large or marked preponderance of bearings falling within either of these groups, and especially if there be an increasing proportion towards the central periods, conspicuously so as compared with similar angles to the South, then it might be that Easter Day or Ascension had governed the setting out. It is by no means attempted to lay down that this would be borne out by the facts of the case, but the days in question are interestingly suggestive of the possibility of such a custom having been the governing principle.

Should a considerable proportion of churches conform sufficiently closely to the table to confirm the theory, but with an error always to the south, then the advocates of orientation at physical sunrise, or watching for the shadow from the staff or pole, made famous by the poet Wordsworth, and after all the more probable explanation, would have their hands considerably strengthened; for unless upon a most pronounced hill, the sun would actually rise several degrees to the south of astronomical sunrise given in the table; or it may be that in different localities or districts the deviations are, as a rule, similar, all northerly or southerly, irrespective of dedication. This, if proved, would be a dangerous blow at orientation. Rededication has been mentioned in the correspondence. Each case should receive most careful corroboration, or it becomes a loop-hole for that most reprehensible habit, adjusting the facts to suit a preconceived theory. This tendency also shows itself in *sometimes* finding it expedient to adjust for the gradually increasing error of the Julian Calendar *and not always*. The date of the existing or original church being known, no such choice is allowable.

Approximate Horizontal Angles of Sunrise North or South of true East.

	Dedication.	Degrees of Latitude North.	A.D. 1700. New Style.	A.D. 1700. Old Style.	A.D. 1400.	A.D. 1000.	A.D. 700.
	JANUARY.		S	S	S	S	S
1	Circumcision	50	37·15	34·30	35·30	35·45	36·30
		53	40·15	37·20	38·20	38·45	39·30
		56	44· 0	41· 0	42· 0	42·30	43·20
21	St. Agnes	50	31·30	27· 0	28·15	29· 0	30·30
		53	34· 0	29· 0	30·30	31·15	32·40
		56	37· 0	31·20	33· 0	34· 0	35·40
25	St. Paul, Conversion of	50	30·10	25· 0	26·40	27·30	28· 0
		53	32·20	27· 0	28·45	29·40	31· 0
		56	35·15	29· 0	31· 0	32· 0	33·40
	FEBRUARY.						
2	St. Mary, B.V. The Purification	50	26·20	21· 0	23· 0	23·40	25· 0
		53	28·30	22·30	24·30	25·20	27· 0
		56	30·50	24·30	26·30	27·20	29· 0
24	St. Matthias	50	15· 0	8·20	10·15	11·15	13· 0
		53	16· 0	9· 0	11· 0	12· 0	14· 0
		56	17· 0	9·30	11·30	12·20	14·30
	MARCH.						
1	St. David	50	12· 0	5·30	7·20	8·15	10·15
		53	12·40	5·50	8· 0	9· 0	10·45
		56	13·20	6·15	8·30	9·30	11·20
				N	N	N	
17	St. Patrick	50	1·45	4·45	4· 0	2· 0	0·00
		53	2· 0	5·15	4·20	2·15	0·00
		56	2·15	5·45	4·45	2 30	0·00
							N
20	St. Cuthbert	50	0·30	6· 0	4·40	3·15	1·10
		53	0·40	6·30	5· 0	3·40	1·20
		56	0·50	7· 0	5·20	4· 0	1·30
			N				
25	St. Mary, B.V. The Annunciation	50	2·40	9· 0	7·30	6· 0	4·15
		53	3· 0	9·40	8· 0	6·15	4·40
		56	3·20	10·10	8·40	6·45	5· 0
	APRIL.						
4	St. Ambrose	50	8·20	15· 0	13·30	12· 0	10·20
		53	9· 0	15·50	14·20	12·40	11· 0
		56	9·30	16·40	15· 0	13·15	11·30
23	St. George	50	19·30	25· 0	23·40	22·40	21·15
		53	20·40	27· 0	25·30	24 20	22·45
		56	22·30	29· 0	27·30	26·20	24·45
25	St. Mark	50	20·30	26· 0	24·40	23·30	22·20
		53	21·45	28· 0	26·30	25·20	24· 0
		56	23·40	30·10	28·40	27·20	26· 0
	MAY.						
1	St. Philip and St. James	50	23·30	28·40	27·30	26·40	25· 0
		53	25·20	30·50	29·30	28·45	27· 0
		56	27·20	33·30	32· 0	31· 0	29· 0
19	St. Dunstan	50	31·30	35· 0	34·15	33·30	32·20
		53	34· 0	38· 0	37· 0	36·15	35· 0
		56	37· 0	41·30	40·30	39·40	38·15
26	St. Augustine of Canterbury	50	33·45	36·40	36·15	35·40	34·50
		53	36·30	39·40	39·15	38·40	37·40
		56	40· 0	43· 0	43· 0	42·20	41·15
	JUNE.						
11	St. Barnabas	50	37·30	38·10	38·10	38· 5	38· 0
		53	40·40	41·20	41·20	41·10	41· 0
		56	44·30	45·15	45·10	45· 5	45· 0
17	St. Alban	50	38·10	38· 0	38· 5	38·10	38·10
		53	41·15	41·10	41·20	41·20	41·10
		56	45·10	45· 0	45·15	45·15	45·15
24	St. John the Baptist	50	38·10	37·15	37·40	37· 5	38· 5
		53	41·20	40·10	40·50	41· 0	41·15
		56	45·15	44· 0	44·30	44·45	45·10
29	St. Peter	50	38· 0	36· 0	36·50	37·15	37·40
		53	41·10	39· 0	39·45	40·10	40·50
		56	45· 0	42·40	43·40	44· 0	44·30
	JULY.						
2	St. Mary B.V. The Visitation	50	37·40	35·20	36·15	36·30	37·15
		53	40·50	38·15	39 15	39·30	40·15
		56	44·30	41·50	43· 0	43·20	44· 0
4	St. Martin, Conversion	50	37·20	34·45	35·30	36·10	36·40
		53	40·30	37·30	38·30	39· 0	39·40
		56	44·15	41·15	42·15	42·40	43·30
20	St. Margaret	50	33·15	29·10	30·40	31· 0	32· 0
		53	35·45	31·20	33· 0	33·30	34·40
		56	39· 0	34· 0	36· 0	36·30	38· 0
22	St. Mary Magdalen	50	32·20	28·20	29·40	30·20	31·20
		53	35· 0	30·30	32· 0	32·45	34· 0
		56	38·15	33· 0	34·50	35·40	37· 0
25	St. James	50	31·30	26·50	28·30	29· 0	30·20
		53	34· 0	29· 0	30·40	31·15	32·15
		56	37· 0	31·15	33·20	34· 0	35·40
	AUGUST.						
6	Transfiguration	50	26·30	21· 0	22·45	23·30	25· 0
		53	28·30	22·30	24·20	25·20	27· 0
		56	30·45	24·30	26·30	27·15	29· 0
10	St. Lawrence	50	24·30	18·45	20·40	21·30	23· 0
		53	26·30	20·15	22· 0	23· 0	24·40
		56	28·30	21·45	24· 0	25· 0	26·40

	Dedication.	Degrees of Latitude North.	A.D. 1700. New Style.	A.D. 1700. Old Style.	A.D. 1400.	A.D. 1000.	A.D. 700.
	AUGUST *(continued)*.		N	N	N	N	N
15	St. Mary, B.V.	50	22° 0	16° 0	18° 0	18°50	20°15
	The Assumption	53	23°30	17° 0	19°15	20°15	21°40
		56	25°30	18° 0	20°30	21°40	23°30
24	St. Bartholomew	50	17°15	11° 0	13° 0	14° 0	15°50
		53	18°30	11°40	13°45	14°50	16°40
		56	19°45	12° 0	14°15	15°30	17°30
29	St. John B. Beheaded	50	14°30	7°50	9°45	10°45	12°30
		53	15°15	8°30	10°30	11°30	13°15
		56	16° 0	9° 0	11° 0	12° 0	14° 0
	SEPTEMBER.						
1	St. Giles	50	12°40	6° 0	8° 0	9° 0	10°50
		53	13° 0	6°30	8°40	9°40	11°40
		56	14° 0	7° 0	9°15	10°15	12° 0
8	St. Mary B. V. The Nativity	50	8°20	1°50	4° 0	5° 0	6°30
		53	9° 0	2° 0	4°20	5°20	7° 0
		56	9°30	2°10	4°40	6° 0	7°30
				S	S		
14	Holy Cross	50	4°45	1°50	0°15	1°10	3° 0
		53	5 15	2° 0	0°20	1°20	3°20
		56	5°40	2°10	0°25	1°30	3°30
						S.	S.
21	St. Matthew	50	0°40	6° 0	4°40	3°10	1°10
		53	0°50	6°30	5° 0	3°40	1°20
		56	1° 0	7° 0	5°20	4° 0	1°30
			S.				
24	St. John B. Conception	50	1° 0	7°45	6°15	5° 0	3°10
		53	1°15	8°30	6°45	5°20	3°40
		56	1°30	9° 0	7°15	6° 0	4° 0
29	St. Michael and All Angels	50	4°30	11° 0	9° 0	8° 0	6° 0
		53	4°50	11°50	9°30	8°30	6°30
		56	5°15	12°10	10°20	9°15	7° 0
	OCTOBER.						
6	St. Faith	50	8°20	14°50	13°30	12° 0	10°20
		53	9° 0	15°45	14°20	12°45	11° 0
		56	9°30	16°30	15° 0	13°10	11°30
18	St. Luke	50	15°30	21°30	20°20	19° 0	17°30
		53	16°30	23° 0	21°40	20°20	18°40
		56	17°30	25° 0	23°30	22° 0	20° 0
28	St. Simon and St. Jude	50	21° 0	26°30	25°20	24° 0	22°40
		53	22°30	28°30	27°10	26° 0	24°20
		56	24°30	30°45	29°20	28° 0	26°20
	NOVEMBER.						
1	All Saints	50	23°10	28°20	27° 0	26° 0	24°30
		53	24°40	30°30	29° 0	28° 0	26°30
		56	26°40	33° 0	31°20	30°15	28°20
11	St. Martin	50	27°50	32° 0	31°15	30°20	29°15
		53	30° 0	34°40	33°40	32°50	31°30
		56	32°30	37°50	36°30	35°40	34°15
20	St. Edmund	50	31°30	35° 0	34°15	33°40	32°15
		53	34° 0	37°45	37° 0	36°20	35° 0
		56	37° 0	41°30	40°30	39°40	38°15
25	St. Catherine	50	32°15	36°15	35°40	35° 0	34°15
		53	35°50	39°15	38°40	38° 0	37° 0
		56	39°10	43° 0	42°20	41°30	40°30
30	St. Andrew	50	34°40	37°20	36°50	36°15	35°40
		53	37°30	40°30	39°40	39°15	38°40
		56	41°20	44°15	43°30	43° 0	42°20
	DECEMBER.						
6	St. Nicholas	50	36°20	38° 0	37°45	37°30	37° 0
		53	39°20	41°10	41° 0	40°30	40° 0
		56	43° 0	45° 0	44°50	44°20	43°45
8	St. Mary B.V. The Conception	50	36°50	38° 0	38° 0	37°45	37°30
		53	39°50	41°15	41°10	41° 0	40°30
		56	43°40	45° 0	45° 0	44°50	44°15
21	St. Thomas	50	38°10	37°15	37°40	37°45	38° 5
		53	41°20	40°15	40°40	41° 0	41°15
		56	45°15	44° 0	44°30	44°45	45°10
26	St. Stephen	50	38° 0	36° 0	36°30	37°15	37°40
		53	41° 5	39° 0	39°30	40°15	40°40
		56	45° 0	42°50	43°20	44° 0	44°30
27	St. John E.	50	37°45	35°50	36°30	37° 0	37°30
		53	41° 0	38°50	39°30	40° 0	40°30
		56	44°50	42°40	43°10	43°45	44°20
	MOVABLE FEASTS.		N	N	N	N	N
	Easter Day—						
	Earliest Day, March 22	50	0°40	7° 0	5°30	4°15	2°30
		53	0°50	7°30	6° 0	4°40	2°45
		56	1° 0	8° 0	6°30	5° 0	3° 0
	Latest Day, April 25	50	20°30	26° 0	24°40	23°30	22°20
		53	21°45	28° 0	26°30	25°20	24° 0
		56	23°40	30°10	28°40	27°20	26° 0
	The Ascension—						
	Earliest Day, April 30	50	23°20	28°20	27° 0	26° 0	24°40
		53	25° 0	30°30	29° 0	28° 0	26°30
		56	27° 0	33° 0	31°20	30°15	28°40
	Latest Day, June 3	50	36° 0	38° 5	37°40	37°30	36°40
		53	39° 0	41°10	40°50	40°30	39°40
		56	42°40	45° 0	44°40	44°15	43°30
	Corpus Christi—						
	Earliest Day, May 21	50	32° 0	35°40	34°45	34° 0	33° 0
		53	34°40	38°30	37°40	36°45	35°45
		56	38° 0	42°10	41°20	40°30	39° 0
	Latest Day, June 24	50	38°10	37°15	37°40	37° 5	38° 5
		53	41°20	40°10	40°50	41° 0	41°15
		56	45°15	44° 0	44°30	44°45	45°10

It should be added that frequently, according to the present Church Calendar, one day only is associated with each saint, whereas in earlier times they had several. For example, St. Andrew's Day is now November 30, but his translation May 9 and September 3, for both days are given, and his consecration to the See of Patras, February 5, used to be observed.

For *present* observation the following, taken from the *British Almanac* for 1893, will be of use. Magnetic north is now 17°12′ west in London, and is in the United Kingdom reducing its distance from true north by about 7′ a year.

The variation west is now in Falmouth, 19°22′; Plymouth, 18°56′; Portsmouth, 17°40′; Dover, 16°33′; Yarmouth, 16°45′; Sunderland, 19°7′; Liverpool, 19°30′; Pembroke, 20°25′; Dublin, 21°2′; Edinburgh, 20°25′; and as a further guide to true north, the following rough notes of the whereabouts of the Pole Star at convenient hours in the evening or night will be useful, and have the advantage of being correct enough for the purpose for the next few hundred years or so. The times given are for the first of each month, and become about 4 min. less every day:—

	1½ deg. West.	1 deg. West.	True North	1 deg. East.	1½ deg. East.
January	12°30	9°45	6°30	—	—
February	10°30	7°45	—	—	—
March	8°30	11°15	—	—	—
April	—	9°15	12°30	—	—
May	—	7°15	10°3	—	—
June	—	—	8°30	11°45	—
July	—	—	—	9.45	12°30
August	—	—	—	7°45	10°30
September	—	—	—	11°15	8.30
October	—	—	12°30	9°15	—
November	—	—	10°30	7°15	—
December	—	—	8°30	5°15	—

In conclusion, one word of warning: Vanes and proverbially modern sun-dials are most untrustworthy evidence of the cardinal points, and be it remembered the sun, if used to find true south, is considered as a clock a very bad time-keeper; he only tells correct mean time on four days in the year, and is at certain periods easily found in "Whitaker's Almanack" as much as 14 minutes slow or 16 minutes fast.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS AND THE ALLIED SOCIETIES:

CONFERENCE AT LIVERPOOL.

ON Friday, the 21st inst., a conference of delegates from the Royal Institute of British Architects, and from the various allied associations in the country, was held, at the invitation of the Liverpool Association, at University College, Liverpool, for the purpose of considering the circular letter addressed by the Institute to the allied associations in September last, as to the dividing of the United Kingdom into provinces, for the purpose of promulgating an improved system of professional education.

In the unavoidable absence of Mr. Harrison, the President of the Liverpool Architectural Society, the chair was taken by Mr. Henry Hartley, vice-president; and there were present, on behalf of the Royal Institute, Mr. Arthur Cates, V.P., Mr. Emerson, hon. sec., and Mr. Slater; for the Manchester Society, Mr. Salomons, President; the Leeds Society, Mr. Bulmer, President, and Mr. Thorpe; for the Liverpool Society, Mr. Culshaw, V.P., Mr. Beckwith, hon. sec., Mr. Dodd, Mr. Grayson, Mr. Aldridge, Mr. Keefe, Mr. Berrington, and others; for the Birmingham Society, Mr. H. R. Lloyd, hon. sec.; for the Sheffield Society, Mr. E. M. Gibbs, V.P.; for the Bristol Society, Mr. W. E. Jones, hon. sec.; for the Nottingham Society, Mr. A. Heazell, V.P.; for the Leicester Society, Mr. S. S. Perkins Pick, hon. sec.; and for the Dublin Society, Mr. Drew, President, and Mr. Murray, hon. sec.

The Chairman, in introducing the business of the meeting, said they were assembled to discuss the proposals contained in the letter from the Royal Institute, which was received on September 1 last. The question of education was a most important one to the whole of the rising generation of architects, for they had too long neglected the practical teaching of young architects. On the scientific and the artistic sides they had left their pupils to evolve their art from their own inner-consciousness rather than giving them lines

by which they should be educated and upon which they could formulate their practice in the future. He asked them to give the subject their fullest and most earnest attention, so that this meeting might not be a futile one, but that they might return to their several duties feeling that they had at least set the ball rolling; that there would come a practical issue out of their consideration; and that they might be able to assist the Royal Institute in formulating a scheme which would be not only for their own benefit, but for the benefit of the rising generation—a benefit which would accrue to the whole of the people of England by bringing into being a better type—a better educated class—of architect.

Mr. Beckwith, Secretary of the Liverpool Society, having read the letter which the Chairman had referred to, and which has already been been published,

Mr. Salomons, of Manchester, moved the following resolution:—

"That this Conference of delegates from the provincial architectural societies in alliance with the Royal Institute of British Architects has heard with great satisfaction the proposal to divide the United Kingdom into architectural provinces, which, if successfully carried out, will materially advance the interests of the profession throughout the country."

Mr. Salomons observed that it was self-evident in every way that such a course as that proposed was desirable in the interests of the profession at large, and even publicly. The want had been felt, and was growing, as they all knew. The seniors, looking back to the past time, knew how they had had to pick up their knowledge by self-education, and what difficulties they had had to contend with. Those difficulties, of course, would be obviated by the system of education now devised, and which would be so materially increased and improved by this centralising movement. He would be very much surprised if any opinion contrary to what he had stated were expressed in that conference. As to the division of the country into districts, his idea, as representing Manchester, was that they had not the slightest wish to take more than their fair share. They wished to be simply one spoke in the wheel to complete the intention of the conference, and to make the thing work pleasantly. But one point had been overlooked as to the advantages of the movement. One great advantage was the assistance that they would be able to render to their members. Constant disputes with builders and others were cropping up, and it would be a great advantage to have a centre to which those disputes could be referred.

Mr. Culshaw seconded the motion, and in reply to a question,

Mr. Cates said that so far as he could estimate at present there would probably be from fifteen to sixteen provinces or districts in all. London would take the whole of the southern part of England which had not been claimed by any existing professional societies, but if at any future time centres such as Oxford or Cambridge or Southampton formed societies of sufficient strength, it would be very easy to carve out districts for them.

Mr. Beckwith expressed the view that it would be a mistake for any society to attempt to cover too large an area.

The Chairman thought that these were matters of detail, and that they were now discussing rather the general principle.

The resolution was then put to the vote and agreed to unanimously.

Mr. Bulmer then moved the following resolution, which he said was entirely in accord with his own views, and he submitted it with a feeling of confidence that it would meet with the unanimous support of the Conference:—

"By the establishment of such architectural provinces, the Architectural Society of each district will have its local centre, and in time, by absorbing within its centre all the architects of repute, bring into harmonious and united action the scattered and unorganised members of the profession; strengthen the position of all local practitioners both professionally and socially; and enable arrangements to be made for extending throughout the country the advantages of the Progressive Examinations now established by the Royal Institute of British Architects, and by promoting a systematic organisation for educational purposes, and utilising and developing such means of instruction as may be available in connexion with such centre, raise the standard of architectural education in all parts."

Mr. Murray seconded the motion.

A discussion followed as to the present means and systems of professional education in Leeds, Manchester, Birmingham, Bristol, Sheffield, and other centres.

The Chairman stated that in Liverpool, for three or four years past, they had had lectures by a professor of art on architecture, and also by a professor on hygiene, to assist in the education of architectural students and pupils. They had also an Engineering School which students might attend, but further than that, within the last two or three months, they had approached the Senate of the University, and had had a meeting with the Senate, asking them to establish in Liverpool a Chair of Architecture. The scheme was rather a large one; but if they could accomplish what they had in view, he believed that they would formulate a very large educational centre for architectural students in the Northern district; they would embrace practical architecture, and would lecture on and teach all the subjects that were embraced in the Royal Institute of British Architects' Examination scheme: the history of architecture, materials, and so on. They also proposed to have a Drawing School and a Studio for Modelling, which, added to the Engineering School, which was already an accomplished fact, would, he thought, place them in a very strong position, and enable them to give an exceptional education to architectural students.

Mr. Drew, of Dublin, suggested that it would greatly assist the local societies if the Institute would give a short statement of what was being done in other places in fighting the battle with various public bodies, and so enable them to get something done. He did not think that the drawing-up of such a statement would be imposing any great task on the Institute, whilst it would be of incalculable advantage to the allied societies.

Mr. Emerson said he thought the suggestion was a good one, and he would be pleased to lay it before the Institute.

Mr. Murray suggested another difficulty, and that was the one of money. He though that the country members paid a very heavy subscription to the Institute in proportion to the gain they had from belonging to it, and he thought that in return the Institute might do something to assist in promoting the educational efforts of the poorer districts.

Mr. Emerson replied that the Institute was poor, and, in fact, was bound to cast about to see where it could save money.

Mr. Murray still thought that something should be done. He lived in Dublin, and he paid four guineas a year. It was true that he got a guinea back as contribution to his own local society, but still the Institute kept three guineas. The members in London got all the printed matter issued by the Institute, and, in addition, they had the use of its palatial rooms. Even the clubs in London made a reduction to country members, and he thought if the Institute did the same they would get a large accession of new members.

The Chairman thought this was going rather beyond the area of the discussion.

The motion was then put to the meeting, and carried unanimously.

Mr. A. Heazell moved—

"That so far as the constitution of the Royal Institute of British Architects and of each society may permit, it is desirable that the President, for the time being, of each society, shall have a seat on the Council of the Institute; and that this Conference do represent to the Council the desirability of steps being taken to obtain such modification of the Bye-law No. 25 as will enable this to be done."

Mr. Pick seconded the motion.

Mr. Cates expressed himself strongly in favour of the proposition, seeing that if the scheme now promulgated were carried out, the presidents of the societies would be the authorised representatives of the whole of the architects of the provinces, and it was extremely important that each local centre should be represented on the Council, and he hoped that no difficulty would arise either in the Council or in the general body which would prevent the bye-law being amended, as suggested.

The Chairman having also expressed himself strongly in favour of the proposition as being likely to weld the profession still more closely together, it was put and carried unanimously.

Mr. E. Jones then moved:—

"That the secretaries of the several provincial societies be requested to confer together to consider the boundaries of each province proposed to be attached to the respective centres for the purpose of provisionally defining the same, and then communicating the same to the Royal Institute."

He remarked that at Bristol the principle of the proposals of the Institute has been most cordially adopted, and though there might be some little difficulty in arranging the various districts, he thought they were such as might easily be overcome; and the whole thing put into satisfactory working order. He asked whether the Institute desired to receive suggestions as to the details, or whether, with its much greater experience, the Institute would suggest something to the districts.

Mr. Cates said it was extremely desirable that, in the first instance, the resolution now proposed should be carried out, and that the proposed Conference should communicate to the Institute the result of its provisional arrangements. He thought it was extremely desirable for the successful carrying out of the details that each society should communicate to the Institute its own views and the result of their personal experiences, and the manner in which they proposed to organise their respective districts. In each particular case there must be peculiar circumstances which would render any one cast-iron scheme of organisation undesirable.

Considerable discussion followed, and after further explanations of the proposals of the Institute,

Mr. Gibbs said that it was a serious question whether, all things considered, the Examinations should not all be conducted in London. There might occasionally be some difficulty in some centres in obtaining competent examiners, whereas no such difficulty could possibly arise if it were arranged that all the Examinations should take place in London.

The Chairman thought the discussion was getting rather wide of the resolution. Before that they had already dealt with the question of education, and the present resolution referred simply to the boundaries of the proposed provinces. He repeated that it was impossible for them on this occasion to satisfactorily deal with questions of detail, and he thought they had better confine themselves to the broad principles.

The resolution was then put and carried *nem. con.*

The Chairman said he presumed they would now form themselves into a committee to discuss the subject-matter of the last resolution. He thought it would facilitate matters if the secretaries first conferred on the questions.

Mr. Emerson, before the formal proceedings closed, asked the delegates to join him in a vote of thanks to the Chairman for the very admirable way in which he had conducted their business, and he also asked them to couple with the vote their thanks to the Liverpool Society for having brought forward this very important question, and organised this meeting of the allied societies, and for their very kind hospitality. He believed that very great good would result from the movement which had now been taken up, and it would very largely promote the interests of the architectural profession in the future.

Mr. Drew said he had very great pleasure in seconding the motion.

The Chairman briefly expressed his thanks on his own behalf, and on that of the Liverpool Society; and cordially reciprocated the expression of Mr. Emerson as to the probable result to the profession of the present movement.

THE SURVEYORS' INSTITUTION:

PROFESSIONAL EXAMINATIONS.

THE following Student Candidates have passed the Examination for the Professional Associateship:—

Andrews, W. E.
Bannister, T. H. C.
Bradshaw, H. G.
Debenham, F. K.
*Eason, E. W.
Fletcher, H. P.
Gray, P. W.
Green, F. A.
Hawes, F. K.
Holiday, P. C.
Irvine, A. W.
King, W. N.
Lancaster, J. R.
Maddox, H. E.
Mann, F. C. T.
†Martin, A. J.
Martin, S.
Neighbour, C. E.
Pain, G. L.
Punchard, C. B.
Sly, J. T.
Stapledon, E. A.
Thompson, F. H.

* Institution Prizeman, 1893. † Special Prize, 1893.

The following Non-Student Candidates have also passed the Examination for the Professional Associateship:—

Almond, W. J., jun.
Bailey, L. H.
Bidwell, J. E.
Birley, J. H.
Birch, R. E.
Bodger, P. M.
Brown, W. L. T.
Cox, R. J.
Champion, G. E.
Cooper, A. W.
Darbishire, H. V.
David, G. W.
Davies, C. F.
Delamare, F.
‡Easton, W. J.
Edmonds, J.
Fitt, H. C.
Hewett, G. T.
Jeffree, S.
¶ Jenkinson, J.
Kennett, C. A.
Lart, C. E.
Marriott, C. W.
Mathews, L. O.
Mellor, J. F.
Monson, H.
Morrison, D.
Morrison, G. D.
Norman, J. N.
Parson, H.
Pearce, F. W.
Pegge, J. T.
Pyke-Nott, J. M.
Roney-Dougal, J. D.
Sale, A. R.
Saker, S.
Seddon, G. F.
Smith, F. B.
Sowels, W. C.
Staley, A. H.
Tee, S. C.
Tyler, W. B.
Waldram, R. E.
Watson, W. J.
West, C. H. E.
Willis, E.
Wonnacott, E. W. M.
Wrightson, R. G.
Wyles, J. W.

‡ Driver Prize, 1893.
¶ Consolation Prize given by President.

THE FELLOWSHIP EXAMINATION.

The following Professional Associates have passed the Fellowship Examination in Division IV. :—

Abrams, B. P.	Debenham, F. B.
‖Amos, F.	Debenham, H. B.
Bancroft, F. H.	Franklin, B. B.
Beadel, F. M.	Goddard, A.
Bellingham, A. T.	Lawley, F. W.
Beven, S.	Leaning, H. J.
Body, A.	Lee, J. W.
Brady, R. H.	Mellenfield, J. H.
Brown, A. B.	Robinson, H. H.
Brown, A. M.	Tory, J. E.
Buckland, S. C.	Tuckett, P. F.
Cobham, G. W.	Tyler, J. W.
Crier, J. T.	

‖ "Crawter" Prize, 1893.

The following candidate has passed the Direct Fellowship Examination in Division V. :—

Blackbourn, Henry, Queen Anne's-gate, S.W.

EXAMINATIONS FOR MUNICIPAL ENGINEERS.

THE Incorporated Association of Municipal and County Engineers report that the following nine gentlemen, having satisfied the examiners at the examination held in London on April 7 and 8, have been granted the Association's Certificate :—

H. E. Anderson, Norwood.	F. J. Finglah, Walsall.
J. E. Birch, Norwood.	W. H. Killick, Southampton.
W. F. G. Brumell, London.	W. E. Putman, Leeds.
A. E. Chasemore, Putney.	Hy. Videan, West Ham.
C. H. Colson, Portsmouth.	

The next examination will be held in Liverpool in October.

THE ART UNION OF LONDON:

ANNUAL MEETING AND PRIZE DISTRIBUTION.

THE fifty-seventh annual meeting of the Art Union of London was held on Tuesday last at noon, in the hall of the Society of Arts, Adelphi, Mr. John Mackrell in the chair.

The Chairman, in opening the proceedings, expressed his great regret at the death of the President, of the society, the Earl of Derby, who, for the last eight years had filled that position, and had given valuable counsel with regard to the management of the society. The meeting would have been postponed had it been possible, but the Council had come to the conclusion, very reluctantly, that its postponement at such short notice was not possible.

The annual report, read by Mr. Harrison, the Secretary, after expressing the acknowledgments of the Council to the honorary local secretaries at home and abroad, recalled the fact that in the last report reference had been to the general commercial depression, which prejudicially affected the prosperity of the society, and on all hands complaints of the same character continued to be heard, especially in connexion with the business of the art world. The effect of that state of affairs was especially apparent in the returns from the Australian colonies, where, for some time past, the financial position had been critical. The reports from the society's representatives in those colonies referred almost without exception to great stagnation of business. Another factor which exercised a deterrent influence on would-be subscribers in the Colonies and in the United States was the wide adoption of protective duties on works of art. We make the following extracts from the report :—

"For the coming year the Council have been fortunate enough to secure the copyright of an important picture, entitled "Summer Time," by Mr. H. W. B. Davis, R.A., a work in which the artist's genius, as a landscape and animal painter, has found full expression. All members of the society who visited the Royal Academy Exhibition last year will remember this charming picture, with its exquisite drawing of the animals in the foreground, and the bright essentially English landscape in the full light of a June day.

With the concurrence of the painter the Council have placed the commission for etching the work in the hands of Mr. Robert Macbeth, A.R.A., whose eminence in this department of art ensures for the members of the society a work of rare excellence. . . . . .

By way of addition to the works reserved for those subscribers who elect not to take the annual engravings, the Council have commissioned Mr. Tinworth to execute two original panels in terra-cotta, in high relief, of religious subjects, "The Finding of Moses," and "The Finding of Christ." This is a new departure for the society, and Mr. Tinworth's works are so justly celebrated that the Council feel assured it will find favour among the subscribers.

Reference was made in the last report to the loan of Maclise's original painting of "The Death of Nelson" to the Naval Exhibition, held last year in Liverpool, and the Council have gratification in reporting that the Corporation of that city have acquired the picture for their permanent collection in the Walker Art Gallery. The Council have also contributed to the recent exhibition of the works of the Royal Female School of Art, and have lately despatched a representative selection of the society's works to the great Columbian Exhibition in Chicago. . . . .

The Council have to regret the loss of the services of Dr. Samuel Smiles, a valued member of their body, who, after many years' association with the society, has been compelled by advancing years and ill-health to resign.

To fill vacancies on the Council there have been elected —Mr. W. Cosmo Monkhouse, Mr. Henry Kimber, M.P., and Mr. William Anderson, F.R.C.S.

The amount of subscriptions for the year now ending, entered up to the time of the closing of the list, will enable the Council, after applying 1,388*l.* 10*s.* for the various works of art presented to the subscribers, to appropriate 1,000*l.* for the purchase in prizes of works of art to be selected by or on behalf of subscribers, drawn for to-day, making, with the prizes already given to members unsuccessful, a total number of 295 prizes.

The impressions taken from the fine mezzotint plate after Sir John Millais, acquired last year, have been restricted to signed proofs, and the Council have pleasure in again including twenty-five of the first state of the plate, suitably framed, amongst the works of art to be given as prizes about to be distributed. . . . .

In the general art world the growth of public interest in pictorial art, as evidenced by the increase of exhibitions, public and private, and by the continued demand for the special literature of the subject, is one of the noteworthy features of the day ; and although the almost bewildering variety of artistic attractions tends to withdraw attention from the work of the society, it must at the same time be a source of gratification to those who have been long associated with that work that the present widespread interest in the fine arts has been largely stimulated by the past action of the Art Union of London, a fact which is apt to be overlooked at the present time."

The report then went on to enumerate the various art exhibitions of the past year, and continued :—

"The National Gallery has received many important additions during the year—an admirable George Morland, a fine Hogarth in the 'Portraits of Hogarth's Servants,' two fine studies of lions by Sir Edwin Landseer, and 'Lady Cockburn and her Children,' one of the greatest masterpieces of Sir Joshua Reynolds, in remarkably fine condition.

It is to be hoped that the opportunity afforded by the new barrack accommodation at Millbank will facilitate the removal of the barracks adjoining the National Gallery, which are a standing source of danger by fire to the National Collection.

In this connexion the Council may give expression to the general satisfaction that the generous offer by Mr. Henry Tate of his collection of modern paintings, referred to in their last report, has been renewed and accepted, and that these representative works will shortly become a national possession.

Another notable gift for public purposes is that made by Mr. Charles D. Fortnum, who has presented his valuable collection of bronzes and treasures of ceramic art to the Ashmolean Museum at Oxford, coupled with the donation of a large sum of money for the erection of a new building for the Museum. More recently Sir John Gilbert, R.A., has been generously distributing his works in his possession between the Galleries of the Corporations of London, Liverpool, Birmingham, and Manchester."

In conclusion, the report gave a summary of the art obituary of the past year.

The Chairman, in moving the adoption of the report, said that, as therein stated, the Council had decided to appropriate a sum of 1,000*l.* for the purchase of works of art by the prize winners. That sum would be distributed as follows :—One prize value 100*l.* ; two at 50*l.* each ; three at 35*l.* each ; four at 25*l.* each ; five at 20*l.* each ; fifteen at 15*l.* each ; ten at 10*l.* each, and there would be, in addition, two small water-colour drawings by Clarkson Stanfield, and a number of vases and ewers made specially for the Art Union by Messrs. Doulton & Co.

Mr. T. Buxton Morrish, Hon. Sec., seconded the motion for the adoption of the report, which was unanimously agreed to.

On the motion of Mr. Bennett Powell, seconded by Mr. T. Olinthus Donaldson, a vote of thanks was given to the Honorary Secretaries, Mr. John Sparkes and Mr. T. Buxton Morrish, who, with the Vice-Presidents and Council, were re-elected.

A vote of thanks was given to the Society of Arts for granting the use of the lecture hall for the meeting.

The drawing for the prizes was then proceeded with, the first prize, value 100*l.* falling to Mr. F. J. Becker, of Old Bond-street.

SHIP CANAL OR RAILWAY FROM THE ATLANTIC TO THE MEDITERRANEAN.—The rival schemes for forming a short cut across France—from the Atlantic to the Mediterranean—by a canal or railway capable of transporting ocean vessels of the largest size, are again being brought forward. According to a recent report of the British Consul at Bordeaux, the latter project is more favourably considered by the public of the district, the Departmental Council of the Gironde having passed a resolution recommending the project to the French Government. The proposed Canal de Deux Mers is 328 miles long, 143 ft. wide, 27½ ft. deep, and has twenty-two double locks. There are to be "*gares*" 200 yards wide for the passage of vessels, as in the Suez Canal. The terminal point on the Atlantic will be near Bordeaux. The canal will run for 53 miles across the level plain parallel with the Garonne, then traverse that river and fall on the right bank to Toulouse, and proceed by way of Moux, Montredon, and Carcassone. A company has been formed for constructing the portion of the ship railway from the Atlantic to Bordeaux, and in the event of this part proving successful, continuing the same to the Mediterranean.

CRYSTAL PALACE SCHOOL OF ENGINEERING:

PRESENTATION OF PRIZES.

THE new lecture-hall of this school, situate at the base of the south tower of the Crystal Palace, was well filled on Saturday afternoon last, on the occasion of the distribution of prizes gained by the students during Easter term. The school, which is now in its thirty-third session, occupies five floors in the south tower, and these floors are appropriated as lathe and tool shops, pattern-shops, drawing offices, &c.

In the absence, through illness, of Mr. F. K. J. Shenton, Director of the Crystal Palace Company's School of Art, Science, and Literature (he has since died, we regret to observe), Mr. Gardiner, the Secretary to the Company, read the Examiners' Report, Easter Term, 1893. The Examiners reported that in the first year's course, (Mechanical Engineering Section), Lecture Examination on "Steam and the Steam Engine," the number of students who had attended was 53 ; number eligible for examination, 49 ; number who had satisfactorily passed, 28 ; highest number of marks attainable, 288. The ten highest were W. C. Gravely with 259 marks ; I. Braby, 241 marks ; R. C. Hall, 237 marks ; H. A. Bailey, 232 marks ; W. Collins, 225 marks ; C. L. Weller, 223 marks ; F. E. Skipwith, 221 marks ; C. Rickard, 215 marks ; A. A. Maxwell, 212 marks ; and A. J. Barnett, 204 marks. In the Drawing Office, the first four students, in order of merit, were E. B. Berthon, E. F. Ievers, and R. C. Hall and N. Maughan (bracketed equal). In the Pattern Shop the first three were W. Collins, F. E. Skipwith, and F. W. Volz. In the Fittting Shop the first four were F. E. Kenyon, R. H. Pocklington, and W. C. Gravely and D. Seth Smith (bracketed equal). In the second year's course (Civil Engineering, first term) the first three were O. S. Barrow, and T. A. S. Dyer and N. Harker (bracketed equal). Second term : First, A. W. Bumpus. Third term : First, C. R. Hewitt and A. H. C. Olley (bracketed equal). Fourth term : First, C. D. Bury. Electrical Section : first term, 1, R. H. Hayne ; 2, P. E. Kern ; 3, A. J. Barnett. Second term : 1, G. J. F. Lemmens ; L. C. H. Savory (Special Certificate). Marine Section : R. L. Bennett. Mining Section : H. T. Creasy. Colonial Section (first year) : 2nd grade, F. H. Middleton, jun. Second year : 1st grade, M. G. Bradford. Certificate of Honour, Second Class, for School Course : C. R. Hewitt.

Mr. Griffith, one of the examiners, reported that, as an old student of this school, it had been an especial pleasure to him to examine the work done by the students in the drawing office, pattern shop, and fitting shop. In all departments he was struck by the excellent character of the work done—a complete set of patterns for a small steam-engine, executed by one of the students, being particularly noticeable. The instruction had evidently been extremely thorough in every particular, and the work of several of the students in each department could hardly be excelled by that of practised workmen. The Principal might be heartily congratulated upon the proficiency attained by the students under his charge. Mr. A. E. Preston, another of the examiners, reported that, after an interval of five years, it had given him great pleasure to again examine the students in the Civil Engineering department of this school. The work done and the answers given appeared to him to be of a higher average than before, and he was of opinion that the course of instruction was one that would make a very efficient groundwork for the future progress of young engineers in their profession. Both these examiners added that, as Mr. A. H. C. Olley, student, had fulfilled the conditions entitling him to a bronze medal of the School of Art, Science, and Literature, they recommended him for that distinction, he having obtained during his course through the school the necessary nine certificates, none of which were below third in order of merit. Mr. Olley was accordingly presented with the medal, amidst the hearty plaudits of his fellow-students.

Sir Charles Douglas Fox, M. Inst. C.E., presided, and before presenting the prizes, addressed some interesting observations to the meeting. It was now, he said, just twenty years ago since he and his friend Mr. Imray acted as examiners of the students' work at the end of the first term of the School. It was then, comparatively speaking, a very small duty which the examiners had to perform, but those who had to perform the same duty now had a far more arduous task imposed upon them, owing to the growth of the School.

He, in common with the engineering profession at large, had watched with great interest the progress and growth of the School. Its success was no doubt largely due to the fact that from the first it had filled a very great want in the profession. But no small part of its success was due to the excellent way in which it had been conducted by the Principal, Mr. J. W. Wilson. He was glad to see from the report of the examiners that they expressed great satisfaction with the work done in the School, and from his own personal observation he was convinced that the work done now was of a much higher character than that done at the time when he last acted as examiner. Proceeding to make some observations specially addressed to the students, the chairman said that the profession upon which they had resolved to enter was one which was characterised by great *esprit de corps*, and the members were all bound together very closely by it. It was a remarkable fact, because they were competing with each other, although it was competition in a scientific race. Such competition was compatible not only with the most friendly feeling, but with the most cordial co-operation. Looking back over the past twenty years he could not help feeling that the task which lay before the young engineer just entering upon the profession was very much more serious than that which those who were now the older men of the profession had to cope with at the outset of their professional careers. Engineering had been greatly widened in its scope, and the knowledge which was now necessary to practise successfully in the profession had been not only widened, but deepened. When he (the chairman) was a young man the English engineer was *facile princeps* wherever he went; neither in Germany nor in France could men anything like his equal be found. But now things were changed. The German engineer had made great strides, both in theory and practice. In France there was an excellent *corps* of civil engineers, with whom it was as much as we could do to keep abreast. In America—well, everybody knew what the American engineers could do. There was one Section which had made its appearance of late years in the curriculum of the School, and that was the Electrical Section. Now there was a great charm about the very name of Electricity, and the electrical engineer had no doubt a great future before him; but in spite of the attractions of electrical engineering, he advised his hearers not to too rashly take up that or any other special branch of engineering. Let them first of all get themselves well grounded in civil and mechanical engineering, for without that groundwork they would not succeed as specialists. The field of engineering was now so large that sooner or later they would all tend to become more or less of specialists, but if they attempted that too soon they would narrow their minds and fail to obtain a broad and comprehensive view of the mission of the engineer.

The Chairman then proceeded to distribute the certificates to the successful students, and addresses were subsequently given by two of the Examiners (Mr. John Imray, M.Inst.C.E., and Mr. Percy Griffith, Assoc.M.Inst.C.E.), and by the Principal, Mr. J. W. Wilson, M.Inst.C.E.

COMPETITIONS.

GARDEN PAVILION, BOURNEMOUTH. — The Bournemouth Town Council met on the 18th inst., when the report of the assessor in the Garden Pavilion competition, Mr. Barry, was read. He placed the competitions in the following order:—1st, No. 15, Messrs. Hawker & Mitchell, Bournemouth; 2nd, No. 5, Mr. J. Johnson, London; 3rd, No. 6, Mr. H. A. Cheers, Twickenham; 4th, No. 14, Mr. J. Donkin, Bournemouth; 5th, No. 13, Mr. Charles Bell, London; 6th, No. 11, Messrs. Treadwell & Martin, London. Mr. Barry expressed himself doubtful whether the most meritorious design could be carried out for the 16,800*l.* allotted to the work in the specifications.

THE ENGLISH IRON TRADE.—The condition of the English iron market shows little change since last week. In the majority of districts crude iron is very quiet, and in some cases, such as in Cleveland and in the North West of England, rates are easier. For finished iron there is little inquiry, and in the North of England quotations have been further reduced. Tinplates, however, continue to display activity, although prices remain unchanged. In steel matters are still rather dull. Shipbuilders and engineers report no improvement. The coal trade is still quiet.—*Iron.*

Illustrations.

DECORATION FOR SMOKING-ROOM.

THIS is intended to give an Oriental character to the room. The constructive wood-work and furniture are of Italian walnut, inlaid with bone and ivory. The wall panels are rich brown leather, the surrounding border in embossed leather, richly-coloured cream (ground blue), red, brown, and a little green, framed by fine mouldings in walnut, enriched with carving. The plain centre panels are to have trophies of armour or other Eastern curios. Glass frame and overmantel in walnut, inlaid with ivory, enclosing richly-painted ceramic panels; the recesses at sides in old gold, also plain panels underneath; the chimney-piece in soft rose marble, with arrangement for plants; brass stove with border of Persian tiles; dado rail in ivory inlay, and glass mosaic dado, silver ground, toned over with deep blue. T. W. H.

COUNTY OFFICES, WAKEFIELD.

THE first premiated design for these offices, by Messrs. Gibson & Russell, was described at length in our last issue, but the following additional notes will show the methods and materials to be employed by the architects in the erection of the buildings.

The style adopted is Renaissance, with English characteristics and details, and stone from the Huddersfield district will be employed for the exterior, with red tiles for the roofs; while Hopton Wood stone, enriched by marbles or terra-cotta, will be used for such portions of the interior as the halls, staircases, ante-room, and council chamber. The halls, corridors, &c., will be paved with mosaic, and the floors of the principal rooms covered with oak flooring in narrow widths.

Faïence will probably be used for the luncheon and smoking-rooms. The walls of corridors will be panelled, and the dados, doors, &c., in the Council Chamber, committee-rooms, and other like apartments, will be executed in hard wood, with their ceilings in enriched plaster.

The construction will be fire-resisting throughout.

WAYSIDE NOTES IN EAST ANGLIA: CLARE.

THE ancient town of Clare, from which the Lords of Clare and Dukes of Clarence first obtained their titles, is situated on the banks of the River Stour, fifteen miles S.S.West of Bury St. Edmunds and eight miles east of Haverhill.

The place teems with interest historically, and from an archæologic point of view there are many remains well worthy of careful inspection.

The Great Eastern Railway just as it enters the station runs through the outer bailey of the once magnificent castle, the area of which exceeded 20 acres.

This castle was the feudal stronghold of the Earls of Clare, and dates its foundation from Saxon times. Even as early as the tenth century, Earl Aluric, son of Withgar, held the fortress, and founded in its precincts a church dedicated to John the Baptist, endowing it with seven prebends, and in 1090 this Church was given by Gilbert de Clare to the monks of Bec in Normandy.

The area of the castle is easily discernible, in spite of much mutilation. The fosse and mound, the outer and inner baileys, the latter enclosed by a wall, and inside which is a vast artificial mound nearly 60 ft. in height, on the top of which was built the keep—a strong, circular flint structure with angular buttresses. This hill was called by the French antiquaries "La motte."

The rampants were formed after the Saxon manner by throwing the contents of the ditch in wards, and were probably surmounted by a wood palisade. A wide ditch separates the outer from the inner bailey; the entrance to the latter being near the middle of the south side of the former, where it appears to have been defended by a barbican of two demi-bastions of earth, around which the ditch was continued, and there probably was the causeway and drawbridge leading to a corresponding opening in the enceinte of the inner court, defended by two towers, one on each side of the entrance, and protected from within by two demi-bastions projecting inwards.

The wall surrounding the inner bailey was between 20 and 30 ft. high, defended by bastions and demibastions, and continued up the motte on two sides to the donjon or keep.

Portions of this wall remain on the N. and S. ramparts, and its foundations are traceable on the S.E. sides.

The motte is situated on the N.W. side of the inner bailey, and is 850 ft. circumference, at the base of which 600 ft. are outside the enclosure of the outer bailey; the height of the mound is 53 ft., and goes at an angle of 27 deg.

The keep is 52 ft. diameter inside, and the walls 6 ft. thick, the foundations being 5 ft. below ground, and 10½ ft. thick at the base. The wall is 25 ft. high above ground, and is battlemented on top. No subterranean chambers exist, and the probability is that this keep was never a place of great strength. There are no remains showing how the keep was reached, but it was no doubt approached by a stair from the inner bailey.

William the Conqueror gave Clare, with other large possessions, to his kinsman, Richard Fitz-Gilbert, son of Gilbert, Earl of Briant, in Normandy, and he gave the lordship to his son Gilbert, who took the name De Clare, and was afterwards created Earl de Hertford; the younger Gilbert was probably the builder of Clare Castle. In 1307, Edward II., and most of the nobility of England were present at the funeral of Joanna of Acre, daughter of Edward I., who was buried in the church of the priory. In 1412 it was in good repair, and well-stocked with furniture, when Edmund Mortimer, Earl of March, came into possession. In 1425 the Castle, town, and Barony were inherited by his nephew Richard, Duke of York, father of Edward IV., by whose accession to the throne they became vested in the Crown, and remained so during the reigns of Edward IV., V., and Richard III. By an Act of Parliament in the 11th of Henry VII. they were confirmed to the king, and not alienated till the 6th of Edward VI., who granted them to his tutor, Sir John Cheeke, but they were resumed by Queen Mary in the first of her reign, and the honour of Clare was annexed by her to the Duchy of Lancaster.

The castle and bailey became vested in the Barnardiston family, then they passed to Sir Gervas Ewes, in whose family they remained till 1825, when they were purchased by the late John Barker, and his heirs still possess them.

The remains of Clare Priory, founded in 1248 by Richard de Clare, Earl of Clare, Gloucester, and Hertford, for Augustine Canons still exists on the S.W. of the town, near to the castle and the priory church in which Joanna of Acre was buried is now a playroom and storeroom. The priory itself has been much altered and repaired, but contains some good panelwork and interesting details.

The church, dedicated to St. Peter and Paul, is a very interesting building, chiefly in the Decorated and Perpendicular styles, but with some good Early English work in the tower, and also the west door. The south door under the porch is a beautiful specimen, the woodwork being ornate and having a strong Flemish feeling. The font is Perpendicular, and the church was once rich in brasses.

There is also a fine screen and old brass eagle lectern. The church plate is well worthy inspection, especially the chalice.

Just outside the churchyard walls, on the south side, is a fine fifteenth-century half-timbered house, shown in my sketch, plastered over in Jacobean times; the date is 1473, and the plastering is in very high relief, some of the ornaments rising 2 in. from the face, but the details are somewhat crude. Beneath the oriel bay on first floor is a carving, much undercut, of two figures, supporting a shield charged with the arms of Verdun: or, a fret gules. Theobald de Verdun was second husband to Elizabeth de Clare, who died *circa* 1361, and the house probably belonged to one of their descendants. On the west face the plastering has been restored, and the date and arms of Clare: or, three chevronels gules, affixed in stucco. The whole house is an interesting study of mediæval architecture, being very perfect.

Against the front wall of the "Swan Inn" is affixed the carved base of an old bay window. It is not in its original position, not being on a level with the other windows, and it may be questioned whether it belongs to the house, though the latter is evidently a very old building. In size it is 9 ft. 8 in. long, and 2 ft. 4 in. in depth, and the carving is in very high relief, and coloured. It belongs to the middle of the fifteenth century, and has in the centre a swan proper, gorged and chained to a tree. This was one of the cognizances of Henry IV. and Henry V. From the tree depend two suns, and in front of the swan is a crescent and star, also a Royal device; behind the swan grows a vine with leaves and grapes. On the return cants of the bay are two shields, the dexter bearing quarterly France

and England with a label of three points, and the sinister shield is quarterley, Mortimer first and fourth Barry of six *or* and *sable*, and in escutcheon *argent* on a chief of the first, two pallets between two gyronny cantons of the second for Mortimer; second and third *or*, a cross gules for De Burgh or Ulster. These two shields are supposed to represent the paternal and maternal coats of Richard, Duke of York. It is conjectured that this was done during a period of harmony between the houses of York and Lancaster, as both parties are represented in the composition.

On the "Swan" Inn is a very fine stack of chimnies, consisting of four octagonal shafts, but the top has been rebuilt and mutilated.

Another very fine stack of chimneys (belonging to late sixteenth century) is to be found on a house called Clifton, formerly the residence of the Barnardistons, but now alienated from that family.

The shafts are all different, and on the base of the chimney in the street face is a large panel that may at one time have been ornamented. The house itself has been completely modernised.

Beneath a toy shop in the market-place is a curious underground chapel, groined over in stone from a centre octagonal shaft; information inspecting it is scanty.

About a mile from Clare is a small, ruined chapel, now turned into cottages. It has a curious Norman door on the north side, shown in my sketch, and a fine block of octagonal chimneys. After its desecration it was converted into a private residence, and during the Civil Wars was used as a powder magazine. Its external width is 20 ft. 6 in. and length 50 ft. It is built with flint, with freestone dressings, and has two Norman windows on the east side, and one Early English on the north side. Postingford and Hawkedon both lie in the vicinity: at the former is a very curious Norman door of most unusual type, and the latter place is chiefly interesting for the number and quaintness of its pew ends, of which there are over forty, all different and of a distinct character.

At the latter place is a very interesting old hall, called Thurston Hall, dated 1607, which may appear in a subsequent series of sketches: it is little known, but well worth a visit, as it shows complete and unrestored an old timber-house brick-nogged with all its peculiar finishings and decorations, all *in situ*.

JOHN SHEWELL CORDER.

ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—On the 22nd inst., the members of the Edinburgh Architectural Association visited Leuchars Church and Earlshall, under the leadership of Mr. R. S. Lorimer, A.R.I.B.A. Rather special interest attached to this visit, says the *Scotsman*, as, owing to the courtesy of Mr. R. W. R. Mackenzie, an opportunity was afforded the members of inspecting Earlshall, which is in many ways a unique example of a Scottish mansion of the end of the sixteenth and beginning of the seventeenth centuries. The house had for a period of over seventy years been abandoned, and was fast falling into ruins when it passed a few years ago into the hands of the present proprietor, and has since been restored under the direction of Mr. R. S. Lorimer, architect. Leuchars Church having been first examined, the party passed on to Earlshall, which lies about a mile distant. Mr. Lorimer, in his description of the house, mentioned that the plan is a development of what is called the L plan—that is, two buildings at right angles to each other, with the main staircase in a tower in the internal angle—and in this case there is also a large tower at the north-east corner. In continuation of the western front there is a high enclosing wall connecting the main house with some smaller buildings, the whole forming a courtyard, in which the old draw well is placed, and enclosed on the east side by a low wall and balustrade, and this side of the courtyard opens directly into the garden. Though not large, the house contains several notable rooms, the most interesting of which is the gallery on the second floor, measuring 50 ft. by 18, and some 13 ft. high, and containing a painted ceiling of very curious design. This is a wooden boarded ceiling taking the form of a flat semi-ellipse, and comes down on to the walls without any cornice or moulding. The upper part of the wall is divided into compartments by arcading formed of painted pilasters and flat arches. In each compartment was a motto. Most of these have long since disappeared; but one of the few remaining informs the reader that "A nice wyf and a back doore oft maketh a rich man poore." The ceiling itself is divided into upwards of 300 panels, alternately square and circular, and joined by scrollwork. The circular panels are filled in with heraldic devices, the arms of Bruce of Earlshall being depicted in the centre. Immediately around are grouped shields, bearing the cognisances of the families with which the Bruces were allied matrimonially; and to the west, the arms of many of the noble families of Scotland. The square panels are filled in with representations of animals, which, there is little doubt, were copied out of some mediæval "bestiary," of which examples still exist in the Bodleian at Oxford and elsewhere. The decoration, which is in black and white distemper, is a piece of seventeenth century fancy work quite unique in its kind. Its preservation was a task of some difficulty, owing to the deplorable condition that the roof of the house had been allowed to get into. The ceiling in a bedroom shows decoration of a similar character. This is a flat ceiling formed of massive beams with plain boarding, the space between the beams being divided into panels by scrollwork, with a picture of an animal in each alternate panel. It is curious, in a house of this date, to find that it does not contain any enriched plaster work, a form of decoration in which some of the old Fife houses are very rich. The "cat-hole" is to be seen cut through the lower panels of many of the doors. This seems to have been a common custom, and sometimes the hole was provided with a little sliding shutter on the room side of the door, the use of these holes apparently being to enable the cat to hunt the house from attic to basement whenever the humour seized her. The fireplace in the stone hall is also worthy of note, as it has a granite lintel 11 ft. by nearly 2 ft. deep, and all in the one piece.

NOTTINGHAM ARCHITECTURAL SOCIETY.—The annual general meeting of this Society was held on the 24th inst., Mr. Robt. Evans, President, in the chair. The following officers and Council were elected:—Mr. W. A. Heazell, President; Mr. J. Howitt, Vice-President; and Messrs. Bromley, R. Booker, Marshall, Goodall, and F. Lewis as Council; Mr. A. Ernest Heazell, Hon. Sec. and Treasurer. Mr. W. A. Heazell having attended the Non-Metropolitan Conference at Liverpool (elsewhere reported in this week's *Builder*), explained what took place, and a vote of thanks was passed for his attending. The question of the division of the country into architectural provinces, and the summer excursion were referred to the Council for further consideration. Four new members were proposed, and votes of thanks to the retiring officers were passed.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday afternoon last at Spring Gardens, the Chairman, Mr. John Hutton, presiding.

Sale and Letting of the Council's Land and other Property.—The Corporate Property Committee brought up a long report on this subject, containing the following passages:—

"We have had under our consideration the question of the Council's failure not merely to find purchasers, but even to secure bidders for its property at recent auctions. Our attention has been drawn to suggestions made by persons in the sale-room at the auctions. We have received reports from the Solicitor, Architect, and Valuer, and discussed with them the subject in all its bearings, and we have had the advantage of two special memoranda on the points, one from the Chairman of the Council, who was present at the auction held on Monday, June 13 last, and another from the Vice-Chairman of the Council. The questions considered by us related chiefly to the conduct of the auctions, the conditions of sale and letting, the nature of the property to be dealt with, and the general management of the Council's leasehold property. The property of the Council dealt with may be conveniently divided into three classes, freehold to be sold, leasehold to be demised, and property to be dealt with under the Artizans' Dwellings Acts. . .

Dealing with the conditions of sale, we find that they are the same as those used by the late Metropolitan Board of Works, with only such modifications as the properties to be dealt with rendered necessary. With regard to the conditions affecting freeholds, subject to no special obligations, we are unable to recommend any substantial alterations other than that they should be compiled in as condensed a form as possible. We are not disposed to recommend the Council to vary the practice of requiring the purchaser to accept the Council's title without investigation, and we do not think such a condition injuriously affects the sale, since it is well known that before the acquisition of the land the Council has had a thorough investigation of title, and the builders of London are satisfied that the Conveyancing department of the Council is managed by experienced officers who would certainly detect any defect, and require it to be remedied before the Council acquired the property.

With reference to leasehold property, it has been asserted that the Council has acquired a character amongst purchasers of this class of property for delay in approving plans and granting leases, and for undue and unnecessary strictness in enforcing conditions against its tenants, and that therefore unless the land is of an exceptionally tempting character, the bidders are few. We think that there is some force in the complaint of the delay in approving plans, arising from the view taken by the Architect of his duty in respect to such alterations, he feeling bound to submit any alterations, of however small a character, to us for our approval; whereas in the case of other ground landlords, tenants are left to settle small matters with the landlord's architect. It is alleged that there are serious delays in granting leases, which is a disadvantage to tenants who have contracted to sell their property or to grant underleases, or who need to raise money upon them. It appears from the conditions generally that the tenant is entitled to his lease when a building is completed as regards its carcase and roofing; in such cases leases are sealed by the Council only on a recommendation by this Committee, and it has been our practice to require from the Architect a certificate framed under an order made by us in April, 1890, with a view to a thorough system of survey before granting leases. To meet these difficulties so far as we can safely do so we think that when alterations in approved plans are proposed, while buildings are in course of construction, the Architect may, if the alterations are altogether unobjectionable, approve them and mark the necessary alterations on the approved drawings, initialling the same, and reporting the fact to us at our next meeting.

There can be no doubt that some of the property now held by the Council and unsold or unleased is in the nature of a residuum, and is not such as can be advantageously dealt with. We are, however, of opinion that such property as is isolated or not of a particularly attractive character, or is held by the Council jointly with another authority, would be more likely to be disposed of if the Council would give the option of purchase of the reversion to the lessees, and include such option in the agreement for leasing. There is little doubt that the power of turning leasehold property into freehold within a period of say five years would be a considerable addition to the selling value of the property, and induce persons to bid who now hold aloof. Such option would enable lessees to obtain money on loan at a reduced rate, and would induce adjoining freeholders to bid who would otherwise abstain from having anything to do with the property; and, in some cases, might enable trustees and public bodies to accept leases who would be otherwise precluded. If this option were granted it would be necessary that the duty of fixing a price should devolve upon one or other of your Committees, and we think that such duty should be entrusted jointly to us and the Finance Committee, such price being dependent upon a number of years to be fixed in each case, and to be determined subject to the approval of the Council.

There is, however, a financial point to be considered in connexion with this subject. All purchase moneys, when received by the Council, are carried to the Consolidated Loans Fund, which is the sinking fund for the redemption of debt, and owing to the growth of this fund, and to the limited powers of investing it to advantage, the late Board sought in 1884 and obtained powers to postpone the sale of their ground rents until the time for redemption of Metropolitan Stock (1929 and 1941), and they acted on this power as financially advantageous, and the Council have followed their practice and refused to sell ground rents, except at very advantageous prices such as would enable them to buy in the market stock of an amount to produce dividends at least equal to the ground rents sold. This results in asking a minimum of about thirty-eight or thirty-nine years' purchase. An option to buy at such a rate would not probably operate as a temptation to bidders, and probably twenty-five to thirty years' purchase would be more likely to prove attractive. It is necessary, therefore, for the Council to consider the bearing of this financial question on the advisableness of giving lessees the option of purchase, and we were of opinion that this point should be considered by the Finance Committee. A further modification, we think, would make the leasehold property more attractive to purchasers, and that is, that instead of granting all leases for a period of eighty years, as has been the custom of the Council and its predecessors, a clause in the conditions should provide for a term being not less, say, than than eighty years, and not more than ninety-nine years, such term being fixed jointly by this Committee and the Finance Committee in each case prior to the issue of the conditions, having due regard to the position of the properties, the terms of building leases in the locality, and other matters. These modifications, combined with the proposed condensation of the

conditions, we believe will tend to bring forward bidders who have previously been kept back. We have not referred to the proposed intended powers o leasing which have been introduced in the Council's General Powers Bill, as they can be dealt with so far as may be needful when the power has been granted to the Council. We have communicated the above proposals to the Finance Committee, who have transmitted to us a memorandum to the following effect—(1) That they agree to leases being granted for ninety-nine years in place of eighty years for isolated and outlying plots of land in neighbourhoods where such a term is customary. (2). That the option should be allowed to lessees to purchase, within a period of five years, the freehold of their holdings in such isolated plots, at not less than twenty-five years' purchase.

As to artisans' dwellings sites, it will be admitted that the difficulty in obtaining substantial offers for land restricted to such a purpose is rapidly increasing, especially as the Council has itself resolved to erect buildings. We are satisfied that this will render it more difficult for persons to take land upon which to erect artisans' dwellings so as to secure for themselves a satisfactory rate of interest. The delay in approving plans under this class of property is even greater than that in the case of leasehold property, inasmuch as the Public Health and Housing Committee, the Home Secretary, and ourselves have to be satisfied in all respects as to the dwellings and their sanitary appliances. The necessity for the approval of the Home Secretary does not arise out of any provision in the Housing Act, 1890, but from the provisions of the schemes made under that Act and the Acts repealed by it, and it is a question of some moment whether it would not be desirable to get rid of the necessity when new schemes are framed. This necessity does not exist where artisans' dwellings have to be provided under Street Improvement Acts, and there seems no good reason why the approval of the Home Secretary should be necessary in the one case more than in the other. We think that if the stringent conditions as to the granting of conveyances or leases and approving of plans were modified, and that a clause were inserted requiring the building to be constructed with good and suitable material and workmanship to the satisfaction of the Architect, the houses would be properly constructed, and much good would result as to sale. About three weeks since we informed the Public Health and Housing Committee of our intended recommendation in the matter of the sales of artisans' sites; but as the matter requires to be dealt with before the recess, we have brought up this report. And we now recommend—

'(*a*) That we be authorised to amend the conditions as to letting property on lease in the following particulars (1) by inserting clauses giving the option to purchase the reversion at a price to be fixed jointly by the Corporate Property and Finance Committees, not being less than twenty-five years' purchase; such option being exercised within five years, and only in cases to be approved by this Committee and the Finance Committee, and where the buildings to be erected have been duly completed in accordance with the contract for letting and to the satisfaction of the Architect. (2) The term of the leases to be for periods of not less than eighty years, and not more than ninety-nine years, the exact period being fixed in each case by this Committee and the Finance Committee before the publication of the conditions of sale.

(*b*) That, subject to any modifications to be approved by the Public Health and Housing and Corporate Property Committees, the conditions as to sale of artisans' sites be amended so as to provide for buildings being constructed with good and suitable material and workmanship to the satisfaction of the Architect.'

We have also considered the question whether the difficulty of sale has been increased by the fact that an officer of the Council acts as auctioneer, and the possibility that better results might have been obtained if an outside auctioneer had been employed who would have his own clients, and whose personal influence and technical experience might induce buyers to come forward. We are unable to find sufficient evidence on one side or the other to justify us in coming to a conclusion as to how far the present system operates to prevent sales or letting, and we therefore abstain from recommending any experiment in the nature of placing the property in the hands of outside agents or auctioneers to be paid by a commission.

As an alternative to the mode of sale by auction, and as a less costly procedure than another auction, we have considered the advisableness in certain cases of offering land by public tender. Repeated unsuccessful auctions are expensive, and abortive auctions damage the reputation of the property; further, we are advised that there are advantages attending sale or letting by tender which cannot be obtained at auctions. In the following list of properties, which we ask the Council to give us leave thus to endeavour to deal with, there are some which have been more than once unsuccessfully offered for sale by auction, and those which have not been so offered are of so small a character that we think it would be well for the Council not to incur the expense of an auction for them only, but to invite tenders for all that are specified in the list.

[The list of properties to be offered for sale or letting included land and buildings at Cheyne-walk; Coldharbour-lane; Holly-hill Hampstead; Rosebery-avenue; York-road, Battersea; Battersea Bridge, Church-street, Fulham; Culvert-place, Battersea; Deptford Bridge; Brook-green-road, Hammersmith; and Southwark-street.

We have communicated our proposals to the Finance Committee, and we recommend—

'(*c*) That all the above-named properties be offered for letting or sale respectively by public tender, the Council suspending, in the case of those marked with an asterisk, the standing order which requires that in the first instance all properties shall be submitted to public auction, and that the officers be instructed to make the necessary arrangements for tenders, and that such tenders be opened by the Council and referred to this Committee.'"

A long discussion arose out of this report and its recommendations, two or three members of the Council roundly declaring that the restrictions and red-tape of the Council militated against the letting of the Council's land. On the other hand, some members expressed themselves as strongly opposed to any relaxation of necessary conditions, as to construction and material, in regard to the buildings to be erected on the Council's land. Something further than the limited control of the Building Act, they urged, was necessary, in the interests of the public as well as of the Council. Eventually the recommendations of the Committee were substantially agreed to, the words "in the case of isolated and outlying plots of land" being inserted after the word "option" in the first clause of recommendation *a*.

Limit of Height of Buildings, whether on Old or New Foundations.—The following special report of the Building Act Committee, dated April 19, was on the *agenda*, but its consideration was postponed:—

"The Council, on December 8, 1891, passed the following resolution—

'That it be referred to the Building Act Committee to consider and report whether, with a view to preventing the increase of insanitary areas in London, it is desirable that effect should be given to the recommendations made in 1885 by the Royal Commissioners on the Housing of the Working Classes, with regard to limiting the height of dwelling houses according to the space about them, whether built on old or new foundations, and what amendments of the Building Acts are practicable in this direction.'

The matter had for some time previously engaged our attention, but owing to the great difficulties in which the subject is involved, we did not see our way to deal with the matter except by more stringent regulations as to the space at rear, which we framed in such a way as to deal with buildings upon old foundations. These and other suggested amendments of the Building Acts were approved by the Council, and forwarded to the Local Government Board.

The Public Health and Housing Committee brought up to the Council on April 12, 1892, the following recommendation:—

'That the Council do pass the following resolution—That, in the opinion of the Council it is desirable that a clause should be introduced into the London Building Law (Consolidation) Bill, controlling the height of buildings, whether built on old or new foundations, in relation to the street or open space in front of them, and that it be referred to the Parliamentary Committee to give effect to this resolution.'

This was ultimately ruled out of order, the Chairman stating that it referred to a question which would properly come before and be considered by the Building Act Committee under the terms of the reference made to them by the Council.

Although no formal reference was made, we thought it desirable that we should reconsider the subject, which we have done on several occasions, with the great advantage of the assistance of certain members of the Public Health and Housing Committee.

It is admitted on all hands that the present state of the law, whereby buildings erected upon sites previously occupied by buildings are exempt from the provisions of the Metropolis Local Management Acts which relate to the setting back of houses, and whereby the provision of the said Acts restricting, in streets of less width than 50 ft., the height of buildings (save with the consent of the Council) are not applicable to streets laid out before 1862, is most unsatisfactory.

The Council is compelled by statute to clear away slum property at immense cost to the ratepayers, but at the same time is without adequate means to prevent the creation of slums under its very eyes.

As the law now stands it is possible to reconstruct slum property, putting lofty buildings in the place of low cottages, so as to reproduce and even greatly intensify the evils resulting from deficient light and air, and as a matter of fact such faulty reconstructions are of daily occurrence.

At the same time, it is difficult without gross injustice to frame clauses of an Act of Parliament which would in effect deprive people of their property without compensation.

To lay down a general law compelling the setting back of all new buildings in old streets subject to compensation by the Council would entail enormous cost upon the ratepayers.

It must, however, be admitted that as a set-off against the advantages of living in large communities, all must submit to restrictions upon perfect freedom of action, and the question to be answered here, as in so many cases, is in what way can the ends desired by the community be attained with the minimum of interference with the rights of the individual.

The principle adopted by the Committee is the same as that laid down in reference to space at rear of buildings in the suggested amendments adopted by the Council last year. It may be shortly described as this:—

To leave the individual in the undisturbed possession of those rights which he has up to this time actnally enjoyed, but to assert that the actual enjoyment of certain rights in the present or the past is not to confer upon him any longer (as it does now) the power to do things which another owner who has not already exercised similar rights is prevented from doing. To make the point clearer we will state a special case: A and B bought, fifty years ago, two pieces of land abutting upon a street 20 ft. in width. Upon his plot A erected a two-story cottage 18 ft. in height abutting upon the street. B erected a mansion set 50 ft. back from street. They now both desire to pull down and rebuild. There is nothing to prevent A from putting up buildings of 40, 60, or even 90 ft. in height, nothing, that is, except possible proceedings by neighbours in respect to ancient lights. B on the contrary cannot, without the consent of the Council, bring his new building further forward than 10 ft. from the street (*i.e.*, 20 ft. from the centre). Why should these two men be differently treated?

We have framed the following clauses to carry out this principle, and feeling that the new powers would have to be exercised with some discretion, having due regard to the very different character of different parts of London, we propose that the Council should ask for power to make by-laws to enable it to lay down from time to time principles for the guidance of the Council and its officers, more especially as to the exemption in whole or in part of limited areas in which it might prove to be undesirable, difficult, or impossible to carry out the clauses in their entirety.

That the Council do approve the draft clauses herewith submitted—

I.—If an old building be raised or extended in any direction, or if a building be rebuilt so as to be higher in any part or to extend further in any direction than it previously did, or if a building be erected wholly or in part upon the site of a building existing within ten years previously so as to be higher in any part, or to extend further in any direction than such previously existing building, any portion of such building that is higher or that extends further in any direction than the old or previously existing building, shall be subject in all respects to the provisions of the Building Acts and Local Management Acts, just as if such portions of the said building were new buildings situated in new streets, any provisions in such Acts to the contrary notwithstanding.

II.—After the passing of this Act it shall not be lawful to raise any existing building, or to erect a building upon the site of any existing or previously existing building and exceeding it in height so that the height of such building measured from the level of the centre of the street immediately opposite the building up to the parapet or eaves of such building shall exceed the distance of the front wall of such building from the opposite side of the street, passage, or way immediately adjacent to such building, or in case two streets, passages or ways be adjacent, then the widest of them shall regulate the height of the said building.

III.—The Council may from time to time (subject to the approval of the Local Government Board) make, alter, and repeal bye-laws as to the exercise of the powers conferred by the sections of this Act relating to the open spaces about buildings and the setting back of buildings for the following purposes, viz.:—

(*a*) To provide for the mode of procedure.
(*b*) To relax or adapt the said sections in their application to special or exceptional cases.
(*c*) To exempt wholly or in part from the operations of the said sections any areas, streets, or parts of streets.'"

After transacting other business, the Council adjourned at half-past seven.

Correspondence.

To the Editor of THE BUILDER.

"SHOULD BRICKLAYERS TILE?"

SIR,—I am glad to see this question raised in your paper. My own decided feeling is against their being employed for work of this kind, because I think that mortar should never be used in tiling. Tiling laid in mortar cannot be easily (if at all, really) repaired; it keeps the roof in a damp condition, and the timbers suffer and decay. It is time that the question should be settled if possible.

The old way of tiling certainly had its defects, but a great deal may be learnt from it. It was unwisely laid on laths, short and weak, and broken by nailing, upon which the tiles were hung by wood pins, which, like the laths, decayed. In the case of our country churches the tiling was generally in a very bad state when church restoration began more than sixty years ago. It was very much kept together by rude repairs, in mortar, made from time to time under direction of the churchwardens. This repairing by help of mortar was to supplement the laths and pins which had largely failed. There was nothing else for it. The generation of architects has now wellnigh gone which can recall the state of our

tiling when the village bricklayer, under direction of the churchwarden, had taken possession of the field as a rough repairer.

It must be remembered, however, that the old tiles had an important special character which we have neglected to continue. They curved sufficiently from top to bottom to form a throating which allowed the rain which might be driven up under them to run back again. Of late years it has been difficult, but not impossible, to get the makers to produce tiles of this curved form, as unfortunately it is their view that a tile should be as flat as a slate, which we all know sucks up water by help of its close joint. The modern flat tile is the old curved one degraded, practically and artistically.

I believe that much of the old tiling was laid in the simplest manner, tile upon tile, but the better class of it was laid with the addition of hay *judiciously* placed near the pins. This kept out snow, and gave warmth in winter and coolness in summer. Some tiling so laid was removed not long since from a tower of Windsor Castle.

For a considerable time past I have been accustomed to use battens and stout galvanised iron blunt pins (not nails) from 2 in. to 2½ in. long, in place of the old laths and wood pins. I endeavour to get a curved tile, and I then use some hay for warmth and dryness, well above any open joints. But this hay must be applied by some one accustomed to the work, or it will be packed too heavily so as to lift the tile off its bed. Perhaps the largest area which I have covered with tiles so laid is that of the buildings for the Gordon Boys' Home, near Bagshot. This work was executed for me by Mr. Norris, builder, of Sunningdale, who has as strong a belief as I have in this system of tiling, and from whom I have frequently borrowed a trained tiler for other builders who have been working for me. I have used this form of tiling very largely in churches, &c. W. BUTTERFIELD.

SIR,—Your excellent correspondent who signs himself "Common-Sense" has put so much reason and good-humour in his letter, that it seems nearly a pity to disturb it by reply; but there are several points that certainly call for correction, if nothing else. The first, with your permission, that I would deal with is, where he says that bricklayers were the only recognised tilers when slated roofs were unknown. In reply to this I assert that both slates and tiles, and slaters and tilers, as two separate trades were known long enough before either bricks or bricklayers. Of course, the slates and tiles of those days were not to be compared with the slates and tiles of to-day. The bricklayer came into existence just in the same way as other trades are blossoming forth to-day; as bricks became common, necessity for him stepped in. It is quite true that both slating and tiling have been done, and are being done, in different parts of the country by different trades. This is accounted for by the fact that it is only in the larger towns that men who do nothing else are to be found, and in the smaller places other trades sometimes swallow it up amongst them. The question is which makes the best coverer, those that are always at it, or those who lend a hand occasionally. Why bricklayers should claim tiling exclusively any more than masons or plasterers I, for one, cannot understand. To slate is to cover with slates or tiles; to tile is to cover with tiles or slates; the word slater means one who covers with slates or tiles. This, in itself, should settle the question as to whom covering with tiles really belongs. Further on, our candid friend says that for every capable slater-tiler hundreds of capable bricklayer-tilers are to be found. If this is meant as a challenge he had better begin finding them, and I, on my part, will bring such a regiment of slater capables that will astonish him. Not hundreds, but many thousands of bricklayer capables will be required to make good such a statement. It is quite true that in some parts of the provinces tiled roofs are the rule—I have seen them myself; but in order to find the men who executed the most of that tiling a visit to the grave-yards will be necessary. Methodical bedding is next spoken of, and here he seems to be unaware of the fact that five out of six roofs to-day are not bedded, being simply nailed; but when bedded a bricklayer's trowel, unless it is half-worn away, is not the best tool for methodical work. Some bricklayers do use them, with the result that they succeed in bedding them not wisely but too much. Cutting tiles with a trowel is the last thing I should think of; the gnawing process is much better, and it is, as a rule, the bricklayers themselves that do the gnawing; slaters generally use a hammer. If being master of the use of a certain tool is to decide the matter, then, as bedding is fast dying out and nailing is becoming the rule, carpenters ought certainly to have a finger in this roof-tiling pie. Slaters and tilers say that as they are complete masters of the hammer and sufficiently acquainted with the necessary trowel, tiling is naturally their work. Still they are not greedy; all that they ask is that bricklayers and others will imitate them by trying to keep strictly to their own trade. Let us alone, let the proprietor, architect, or builder order or employ whoever he may think best to do the work, and then time and experience, which proves all things, will eventually prove who are the fittest for the work.

"LIVE AND LET LIVE."

THE SCENERY OF "BECKET."

SIR,—Personally appealed to, I must say I am not yet prepared to endorse the conclusion at which you have arrived in your editorial comments upon my letter and work. But in these few concluding remarks I will be as brief as possible. I believe you are perfectly right in saying that the large columns that divided the transepts stood equi-distant from the east and west walls. In my model first shown to Mr. Irving I so placed it, but, placed so, it hid the chief actor in the tragedy from one side of the house, in the most important situation of the play; so the column was removed slightly to the right. With respect also to the two broad steps, which cross the transept from right to left; for these, as you say, I have no authority. They were introduced afterwards by Mr. Irving's wish, and I think with advantage to the business of the scene, and not hurtful pictorially. The introduction of the iron-work between the arches is certainly excusable for many reasons. At Westminster and Canterbury, many of the arches at their springing are tied together with iron rods (I presume as a tonic for some structural weakness), and being there are added to and made use of for decorative purposes, as suggested in Stanley's "Memorials." Classic, the smaller lamp from a design by Edwin Long, R.A., for the Temple of Ephesus. Italian the larger one (neither designed for "Becket"), but without taxing credulity too much, one might trace the interesting story of their progress to Canterbury; for was not the church and the shrine the receptacle for gifts from all quarters of the world? The blank space on the left in your reproduction is not a blank space in the sketch; the pier of Ernulf with the cluster of columns supporting the tower are faintly indicated, together with the beam which rested between them, upon which stood the crucifix and on either side St. Mary and St. John. The southern pier in the scene (the side facing the choir) I have decorated after the character of the painting in the Chapel of St. Gabriel.

To return to the question of the vaulting of the roof that covered the scene of the m urder, I presume, of course, that Professor Willis interprets Gervase correctly; but in a work upon Canterbury Cathedral, which also quotes Willis with respect to the vault, I found the quotation given in my previous letter with respect to the flat ceiling to the transept. Perhaps this referred to the actual roof, and not the crypt-like lower portion of the transept. [Very likely.—ED.] Between these apparently conflicting accounts I chose the one which, under the circumstances, appeared the most practicable.

The set-off in the wall, the N.W. corner of the N.W. transept, the only portion remaining unencased of Becket's period, exists in fact, not in my imagination. The height of this set-off agrees with that of the blocked-up doorway in the S. transept. At Canterbury there is attached to the steps leading to the south choir aisle (the steps which I have reproduced on the north side, as denoted in Willis's plan), an exact counterpart of my "area railing" rust-eaten and with remains of colour on it. I should think it was in existence at the time of the Roman Catholic occupation of the cathedral. "Things equal to the same thing," &c. Things like the same thing are like one another.

W. TELBIN.

*** Mr. Telbin has sent us a rough sketch of the plan of his scene as he laid it out; but we can assure him that, if he professes to be following Willis's restoration, his steps and his pier are *not* in the right place, either in regard to each other or to the main steps. The side stair was not side by side with the main stair; but eastward of it (see extract from Willis's plan, p. 307, *ante*); the pier extended westward of the side stair; Mr. Telbin puts it back eastward, half up the stair, in his sketch plan. Mr. Telbin seems very positive about the set-off on the interior of the transept wall; we can only say we looked carefully for it and could see nothing of the sort, except at a point far too high up to affect the question. Tie bars were not in true Gothic used across arches as originally built, they are after-insertions when the building required them, and their usefulness would certainly not be improved by all the filagree work introduced in the scene. The defence of the Classic lamps is ingenious, but looks rather like an afterthought. We have not looked closely at the iron stair-rail referred to, but we should think Mr. Telbin's belief in its Mediæval date was a touching instance of faith.

We admit that the steps across the transept are a useful stage feature, but as they were inserted and the pillar moved out of its right place solely for stage effect, what becomes of Mr. Telbin's statement (in his former letter) that he never condoned alterations from architectural consistency and truth for the sake of stage effect?

Of course the scene does well enough for the general public, who are not critical in these matters; we only contend that from an architect's point of view it is an impossible one, and that it does not correctly follow the authority it professes to follow. —ED.

STABILITY OF PIER OF ARCH.

SIR,—The problem of the conditions of stability of a corner-pier on which two arches rest at right-angles to each other can surely be solved in a simpler manner than that adopted by Mr. Gavin J. Burns, B.Sc. (the *Builder*, p. 308), by help of the elementary principle of the "resolution of forces." Suppose that two equal semi-circular arches rest on the angle-pier, the horizontal thrust of each being represented by the quantity N and acting at the "joint of rupture" (see "Mechanics of Architecture," p. 184), which in a semi-circle will be at a height equal to half the radius of the intrados above the springing. If h stands for the height of the pier and r for the radius of the arch, then the thrust N acts horizontally at a height equal to $h+\frac{r}{2}$ above the base of the pier. The two equal forces, N, at right-angles to each other, will have a "resultant" whose value is $\sqrt{2}$ N, or 1·4142 N, which represents the horizontal thrust of the two arches in the direction of the diagonal of the pier. The "moment" of this force about the bottom outer edge Z, of the pier is,

$$1{\cdot}4142.\ N\left(h+\frac{r}{2}\right) \quad \text{.....(A.)}$$

The forces to resist this tendency to overturn the pier are, the weight of the pier itself acting down its centre of gravity, and the weight of one half of each arch and surcharge acting vertically at the "joint of rupture" ("Mechanics of Architecture," p. 190). The distance of this point from the outer edge of the pier is $t+{\cdot}133r$, where t is the thickness of the pier; and the distance from the angle of the pier is

$$\sqrt{\left((t+{\cdot}133r)^2+\frac{t^2}{4}\right)}=\sqrt{\left(\frac{5}{4}t^2+{\cdot}266\,r.t.+{\cdot}177r^2\right)}=p;$$

and the weight of each of the half-arches and surcharge is P.

Consequently, the moment of P about Z is P.p. There is also the weight, Q, of the pier itself acting down the middle of the pier, the moment of which, about Z, is Q.q; where $q=\sqrt{2}\times\frac{t}{2}={\cdot}707t$.

Then the sum of the moments of resistance, taken about the foot Z of the angle pier, is

$$2\,P.p+Q.q \quad \text{.....(B).}$$

When the quantity (B) equals the quantity (A) the pier is just in a condition of equilibrium; when less, the pier will be overturned, and when greater, it will be in a condition of stability.

Let us apply this to an example in which $r=5$ ft., $h=10$ ft., and the height of the top of surcharge above soffit of arch at the crown is 4 ft.; so that the total height of the pier from base to top of surcharge is 19 ft.

Let $t=2$ ft. Suppose the whole structure to be built of material having the same specific gravity. Then by the rules for the stability of arches, ("Mechanics of Architecture" p. 192), we find P=52, N=23, Q=76, $p=3\frac{1}{2}$, 9=1·4142.

For the value of (A) we have

$$1{\cdot}4142\ N\left(h+\frac{r}{2}\right)=1{\cdot}4142\times23\times12{\cdot}5=406{\cdot}6.$$

For the value of (B) we have

$$2P.p+Q.q=104\times3\tfrac{1}{2}+76\times1{\cdot}4142=471{\cdot}5.$$

And as the latter is considerably in excess of the former, we may consider the structure to be in a condition of stability.

If we make $h=12{\cdot}5$ ft. instead of 10 ft., we find the value of (A) to be 488, and that of (B) to be 486, consequently the structure would in this case be in a condition of instability. E. W. T.

THE SYMBOL OF THE CROSS.

SIR,—To state that the Cross is the central emblem of Christian symbolism, and has been so from the Mediæval period, is to state but a truism; and it is equally true that neither its form, nor the importance attached to it as a religious sign, arose with Christianity, but originated at a far earlier period; for it is admitted that in very many countries where archæological researches have been made a pre-Christian cross, with certain religious and mystical meanings attached to it, has been found.

But it may be urged that no matter what was the origin of its form, it undoubtedly derives its present significance from the *fact* that it was used as the instrument of the crucifixion of our Saviour.

But that this is a well-ascertained fact may be questioned, for the Holy Scriptures nowhere assist us to determine that a cross-form was employed upon that occasion.

On the contrary, the Greek word, σταυρος, used throughout the New Testament, and translated "cross" many centuries later, did not mean at the date of the Crucifixion, a cross, necessarily of *two* pieces, but simply one upright piece—a pole or stake; and in this sense it was used by contemporary writers, and many have been put to death upon such stakes by nailing the two hands above the head with one nail, as the two feet are usually shown to be nailed upon a cross.

It is usual to divide the forms of the cross into the three classes denoted by the terms *crux immissa*, *crux commissa*, and *crux decussata*, but although these terms may convey the idea of mode of construction and shape, they cannot be regarded as grouping them satisfactorily as to meaning, for the equal-armed cross of St. George, and the unequal armed Latin cross of very different signification

both fall in the same class, while the T-shaped cross, which is closely allied to the Latin cross, is placed under a different head.

In signification the three principal forms of the cross are as distinct from each other as are the letters A T Z in the English alphabet, and it is suggested that they might advantageously be arranged according to their symbolic values, which are very fairly represented by these three letters.

The letter A as the first letter of the alphabet corresponds in value, though not in shape, with the St. Andrew's cross X, the letter T with the Latin cross shaped thus †, which is only another form, and the equivalent of the T-shaped cross; and the letter Z, as the last letter of the alphabet, with the St. George's cross +, for it must be remembered that these *crosses* derive, party at least, their significance from being *letters* of an older alphabet.

The Scriptural title of Christ as the Alpha and the Omega, seems to be the key to the subject, for although these two Greek letters are not in themselves cross forms, they refer to the parallel expression of the Rabbins, "Ab Aleph usque ad Tau," which two Hebrew letters, the first and last of the Hebrew alphabet were crosses.

Tau means cross, but is not so formed in the later Hebrew square characters which are similar to Chaldee letters, although in Aleph the form of the St. Andrew's cross can be traced, but in the earlier coin letters the Tau is a cross also.

Therefore, it seems that there is a connexion between the St. Andrew's and St. George's crosses, the Aleph and the Tau, the Alpha and the Omega.

The other forms, the Latin † and allied T-shaped crosses were Pagan religious emblems long before the Christian era, and there is no contemporary evidence to connect either with the instrument of our Saviour's suffering, and as they do not appear to have been used as Christian signs in the Roman Catacombs until the fourth or fifth century of this era it seems reasonable to suppose that they were introduced as such at the period when, as is well known, the passage from Paganism to a nominal Christianity was made easy by giving Christian names to time-honoured pagan customs and symbols.

As the Tau or T of the Greek and Roman alphabets, the equivalent of the Latin cross, is not the *last* letter of those alphabets, it does not possess the significance which on that account is attached to the Hebrew Tau, and although it may have derived its name from the latter as well as its shape, by an elongation of the lower limb + becoming ‡, its importance as a Pagan symbol lies in the fact that it was the initial of the name of the Pagan saviour, Tammuz, even if it did not refer to that phase of religion, derived from nature, known as Phallic worship.

The conclusions suggested by a consideration of this subject are briefly these :—

1. That no cross of any kind was used as the instrument of our Saviour's death.

2. That the Latin and T-shaped crosses were pagan symbols unassociated with Christianity until the Mediæval period.

3. That the St. Andrew's and St. George's crosses refer to the name of Christ, and so, irrespective of any particular language, may be regarded, when combined, as an Ideograph for all time.

That the fact that such ancient symbols are cross-shaped accounts for the world-wide importance attached to the cross, as a religious sign, prior to the Christian era, which the misconception with regard to the form of the instrument of the Crucifixion by no means lessens. J. HOUGHTON SPENCER.

Taunton, April 15, 1893.

The Student's Column.

CHEMISTRY.—XVII.

Experiments. Group 10.

DETERMINE qualitatively the constituents of various clays and bricks. Grind the clay or brick to a *very fine powder*. The success of the subsequent analysis depends in a great measure upon the fineness of the powder employed. Now treat a small portion of the powder with dilute HCl and look for insoluble silicious matter, "soluble silica," iron, aluminia, lime, magnesia and alkaline salts in exactly the same manner as when examining limestones and cements (see Paper XV.).

The insoluble silicious matter will consist principally of silicate of alumina and small quantities of other silicates. To estimate the silica in it, the insoluble residue, after being washed and dried, is mixed with about three or four times its bulk of "fusion mixture" consisting of a mixture of potassium and sodium carbonates and heated in a platinum basin having a platinum cover to a bright red heat. The mass melts and the silicates decompose and form silicates of potash and soda, which are soluble in water and are decomposed by acids. The mass must be kept in a melted condition until no bubbles, due to the escape of CO_2 from the fusion mixture, can be seen in it. The fusion usually takes from five to ten minutes to become completed. The basin and contents must now be allowed to cool. HCl is then cautiously added, in small quantities at a time, until the whole mass is dissolved, the basin being covered with a glass cover to prevent loss by spitting. The solution in the basin consisting of silicic acid, potassium, sodium and aluminium chlorides, &c., is now evaporated to complete dryness. The silica being thus rendered insoluble, the mass is moistened with HCl and treated with hot water. The SiO_2 may now be filtered out, and the filtrate treated for alumina, iron, lime, and magnesia as in the examination of cements.

To Detect Sulphur in Clays, &c.

To detect sulphur present as *sulphides* add some HCl to the powder, and hold a lead test-paper (blotting-paper soaked in lead acetate solution) over it. If sulphides are present, it will be blackened by the liberated H_2S.

To obtain the *total sulphur* present, fuse some of the powdered material with fusion mixture as before, then dissolve the mass, when cold, in hot water with the aid of a little HCl, filter, boil the clear filtrate, and obtain the sulphur, as in the case of cements, by adding barium chloride solution to precipitate the sulphur as barium sulphate.

Quantitative Analysis.

The quantitative analysis may be made in a very similar manner, by taking a known quantity of the material, say, 2 grams, or 25 grains, in a very finely powdered condition; washing, drying, igniting, and weighing the various precipitates and employing pure chemicals.

Silicious Stones.

Granite is a rock consisting essentially of—

(1) *Felspar*, a silicate of alumina, potash, and soda, &c.
(2) *Quartz*, native silica, SiO_2 and
(3) *Mica*, consisting of complex silicates of aluminium, potassium, and other elements.

It often contains in addition small quantities of other materials.

There are several varieties of felspar, but those of most common occurrence in granite are potash felspar (orthoclase) and lime and soda felspar (oligoclase). The following are analyses of the felspars :—

Analyst.	Abich Orthoclase.	Damour Oligoclase.
SiO_2	65·72	62·30
Al_2O_3	18·57	22·00
Fe_2O_3	—	0·04
K_2O	14·02	0·94
Na_2O	1·25	8·20
CaO	·34	4·86
MgO	·10	—
	100·00	98·34

The following are analyses of two of the various forms of mica found native. Muscovite is the mica which most commonly occurs in granite.

Analyst. Variety of Mica.	Remmelsberg. Muscovite.	Penfield. Phologopite.
SiO_2	46·74	44·81
Al_2O_3	35·10	10·87
Fe_2O_3	4·00	—
FeO	1·53	0·31
MgO	0·80	28·90
K_2O	9·63	8·40
Na_2O	—	0·38
Li_2O	—	0·08
F	1·05	—
Water	3·36	5·42
	102·21	99·17

As a rule, granite contains about 40 per cent. felspar, 30 to 40 per cent. of quartz, and from 10 to 20 per cent. mica. Mica occurs in semi-transparent glistening scales, which can easily be sliced with a knife.

The felspar in good granite is crystalline and lustrous. The grains are of different shapes and sizes, and its colour varies considerably.

The quartz in granite occurs chiefly in the form of very hard glassy grey or colourless lumps.

Syenite or *Syenitic granite* differs from ordinary granite only in having hornblende substituted for mica. There are many varieties of hornblende, but they are mostly anhydrous silicates of lime, magnesia, and protoxide of iron (FeO).

Porphyritic granite has large independent crystals of felspar occuring irregularly throughout its mass.

The following analysis will give an idea of the chemical composition of granite :—

Locality. *Analyst or authority.*	Heidelberg. Streng.	Fox Rock. near Dublin Haughton.	Egyptian Syenite* Delesse.
Silica	72·11	73·00	70·25
Alumina	15·60	13·64	16·00
Oxide of iron	1·53	2·44	} 2·50
Oxide of manganese.	0·26	—	
Lime	1·26	1·84	1·60
Magnesia	0·34	0·11	} 9·00
Potash	5·00	4·21	
Soda	2·27	3·53	
Water	0·83	—	0.65
Loss	—	1·20	—
	99·20	99·97	100·00

* From a fragment of an antique in the collection of the Louvre, Paris.

Diorite is a *greenstone* composed chiefly of albite, oligoclase and hornblende. It is extremely hard and tough. The Penmaenmawr stone of North Wales, which is so largely used for paving, is included among the greenstones. It is a crystalline, granular rock, and is easily split into layers from which blocks of a size and shape suitable for street paving may be cut.

Basalt somewhat resembles greenstone, and is composed of lime, felspar, augite, and titanoferrite. Basalts occur (1) as vertical dykes, (2) as sheets or beds intruded among older rocks, and (3) as tabular sheets poured over the surface, and forming horizontal or inclined beds, often interstratified with volcanic ashes, agglomerates, and bands of bole (Hull).

Gneiss is a crystalline aggregate of quartz, felspar, and mica. It differs from granite in being foliated in texture through the mica it contains occurring more in layers. The rock is easily split into slabs. Gneiss often passes into foliated granite, or into mica-schist.

Mica-schist is grey or silver-grey in colour, and has a shiny surface. It is composed principally of mica and quartz, which usually occur in alternate laminæ.

Slate.—The occurrence of slate has been considered under clays.

Serpentine consists of hydrated silicate of magnesia, usually containing, however, small quantities of other substances. It is mottled in appearance; the predominating colour is usually green or red, permeated with veins of white steatite. Serpentine is capable of taking a fine polish, is soft enough to be cut with a knife, and is very compact in texture. It is, however, only suitable for indoor use, because it weathers very badly when exposed to the influence of wind, rain, and frost.

The following are analyses of Serpentine :—

Analyst.	Haughton	Bristow.	Delesse.	Hunt.
Locality.	Cornwall.	Galway.	Vosges.	Oxford. Canada.
Colour.	Red.	Light Green.	Dark Green.	Green Homogeneous
Silica	38·29	40·12	40·83	40·30
Alumina	—	2·00	92	—
Protox. Iron	13·50	3·47	7·39	7·02
Manganese Oxide	—	—	trace.	—
Oxide of Nickel	—	—	—	·26
Chromium Oxide	—	—	·68	trace.
Lime	—	—	1·50	—
Magnesia	34·24	40·04	37·98	39·07
Water	12·09	13·36	10·70	13·35
	98·12	98·99	100·00	100·00

Sandstones, sometimes termed *freestones*, are composed of grains of quartz or sand cemented together by carbonate of lime, oxide of iron, or by silica in some other form than quartz; there can be little doubt, moreover, that sandstone was originally consolidated under great pressure, and possibly while at a very high temperature. Sandstones vary greatly in colour, the colour being usually due to oxide of iron, the variations being caused through the oxide being present sometimes as protoxide and sometimes as peroxide, sometimes anhydrous, and sometimes hydrated.

Flagstones are cut from sandstones, which can easily be cleaved into thin and even layers along the plane of bedding. The facility with which certain sandstones can be so cut is usually due to the presence of layers of mica in them. Hull gives the following analyses of well-known sandstones :—

	Craigleith.	Darley Dale, Stancliffe.	Heddon.	Kenton.	Mansfield Lindley's Red.
Silica	98·3	96·40	95·1	93·1	49·4
Carbonate of Lime	1·1	0·36	0·8	2·0	26·5
Carbonate of Magnesia.	0·0	0· 0	0·0	0·0	16·1
Iron Oxide and Alumina	0·6	1·30	2·3	4·4	3·2
Water and Loss	0·0	1·94	1·8	0·5	4·8
	100·0	100·00	100·0	100·0	100·0

The "Weathering" of Stones.

The air of towns always contains traces of sulphuric acid, and sometimes traces of hydrochloric and nitric acid. Each of these acids will decompose carbonates with the liberation of CO_2, hence all limestones decompose more or less rapidly and crumble to pieces in ordinary town air. Even in country air there is, as has been previously shown, a certain amount of carbonic acid, and this forming a solution with rain and being beaten on to the stone dissolves a portion of the carbonate of lime or magnesia, forming a solution of bicarbonate, which is washed away before it decomposes by evaporation and returns once more to CO_2 and insoluble carbonate of lime. But that the chemical composition alone does not determine the weathering value of a stone, is shown by comparing the almost pure carbonate of lime known as *marble* with the commoner soft limestones containing small quantities of impurities which have, if anything, superior weathering powers to carbonate of lime. The marble being very dense and compact, is acted upon only to a slight degree, while the soft limestone, on the other hand, allows the aqueous acid solution to soak into it, even if it does not actually draw it into itself by capillary attraction, and consequently the body of the soft stone becomes decomposed instead of merely the surface, as in the case of marble.

From the foregoing facts it is evident that certain stones will weather much better in country air than in town air, and much better in comparatively rainless districts than in very rainy localities. Wind affects the durability of stone in several ways. (1) In dry weather it dries it by absorbing the moisture, and thus tends to preserve the stone; (2) a strong wind wears the stone away by driving particles of gritty matter against it; and (3) in rainy weather, wind probably drives the rain into the stone to a considerably further depth than it would otherwise go.

To a certain extent water, irrespective of any acid it may contain, has a wearing effect upon stone; but one of the greatest stone-destroying agents is water subjected to a freezing temperature, the force of the expansion of the water upon changing into ice being frequently sufficient to split the stone, or at least to form cracks in the mortar joints of a building.

Stones containing iron pyrites are liable to split through the oxidation of the sulphide into sulphate.

Some stones consist principally of grains of substances which weather well, but the material which cements the grains together being rapidly affected by exposure to the weather, the whole stone is rendered useless.

As a rule, stones having the closest and finest texture or grain are likely to weather best, because they will absorb water and gases less, and each individual grain is less exposed than in stones possessing coarse grains.

Experiments, Group II.

The following tests will give some idea of the weathering qualities of a stone:—

1. Immerse a block of it, say, six cubic inches, in water for twenty-four hours, and note the weight of water which it has absorbed. Compare this increase in weight with the weight of water absorbed in the same time by the same volume of stones which are known to possess good weathering qualities. Usually the best stones absorb the least water.

2. *Acid Test.*—Soak a piece of the stone for a few days (1) in water containing 1 per cent. HCl, and (2) in water containing 1 per cent. H_2SO_4. Compare with effects produced by treating equal volumes of good stones in a similar manner.

3. *Smith's Test.*—"Break off a few chippings about the size of a shilling with a chisel and a smart blow from a hammer; put them into a glass about one-third full of clear water; let them remain undisturbed at least half-an-hour. The water and specimens together should then be agitated by giving the glass a circular motion with the hand. If the stone be highly crystalline, and the particles well cemented together, the water will remain clear and transparent, but if the specimens contain uncrystallised earthy powder, the water will present a turbid or milky appearance, in proportion to the quantity of loose matter contained in the stone. The stone should be damp, almost wet, when the fragments are chipped off."

OBITUARY.

MR. T. GLEDHILL.—According to the *Leeds Mercury*, Mr. T. Gledhill, Surveyor and Inspector to the Heckmondwike Local Board, died at his residence, Church-street, Heckmondwike, on the 22nd inst. Deceased was sixty-three years of age, and had held the appointment under the Board—originally as a working surveyor—for twenty-eight years. A few months ago he was elected an A.M.Inst.C.E., and under his direction the town's internal drainage scheme and sewage disposal works were being proceeded with

GENERAL BUILDING NEWS.

NEW CATHOLIC HALL, MANCHESTER.—The new hall in connexion with the Church of the Holy Name, Manchester, was opened on the 19th inst. by Cardinal Vaughan. The hall is built on ground adjoining the church, and faces to Dover-street and Portsmouth-street. The cost has been about 7,000*l.* The hall, which has a lofty half-timbered roof, has sitting accommodation in the area for about 600 persons. At one end there is a gallery, and at the other a broad platform or stage. Connected with the hall are various smaller rooms, including a library, reading-rooms, and rooms for recreation, and under a separate roof there is a gymnasium. Several rooms are set apart for the use of young women as recreation and play rooms. The arrangements include a set of kitchens and other conveniences for social meetings. The architect of the building was Mr. Edmund Kirby, F.R.I.B.A., Liverpool, and the contract has been carried out by the executors of the late Mr. J. L. Ward.

CONGREGATIONAL CHURCH, SHAW, LANCASHIRE.—Four memorial stones of a new Congregational Church in course of erection in Rochdale-road, Shaw, were laid on the 15th inst. The new building will be 54 ft. long by 40 ft. wide. There will be in addition a choir vestry, and a vestry for the use of the pastor. There will be a small gallery over the vestibule, and two staircases will be erected at each end to lead to it. The building will seat 450 persons, and is estimated to cost 2,000*l.* The style adopted is Gothic, and the front will be built of faced stone, and the sides will be faced with brick and stone. Mr. Harold Cheetham, of Oldham, is the architect; and Mr. William Harrison, of Shaw, is the principal contractor.

MEMORIAL TOWER AT THE PARISH CHURCH, WALMER, KENT.—The dedication service of the memorial tower and peal of bells erected at the new parish church, Walmer, to the memory of the late Lord Granville, took place on the 13th inst. The spire and tower were erected from the design of Sir A. Blomfield, A.R.A. The memorial tablet, which was unveiled by Lady Herschell, bears a suitable inscription, and is surmounted by the Cinque Ports arms. It is of mosaic work, executed in Sicilian alabaster, and has been designed and constructed by Messrs. Powell, of Whitefriars, London.

UNITED PRESBYTERIAN CHURCH, CATHCART, LANARKSHIRE.—The foundation-stone of Cathcart U. P. Church was laid by Mr. Robert Gourlay on the 8th inst. The site adjoins the Couper Institute, with the principal frontage towards the main road. The church is planned as a nave, roofed in one span, with transepts, and a choir recess of considerable depth to accommodate an organ. All the arches of the interior are of polished stone, and the arcades separating the transepts from the interior are carried on polished stone columns with moulded shafts and bases. The walls of the interior are panelled with yellow pine lining to a height of about 7 ft. from the floor, and above that they are finished in plaster. The roofs are of half-open timber work, the timber being dressed where exposed. The principal doorway opens into the main vestibule, which is 9 ft. wide. The span between the present hall and the new church will be roofed in, and the session-house, &c., placed there, with a corridor connecting front and back, and with through communication under cover to all parts of the complete group of buildings. The vestry is situated at the back, and, in addition to the small hall behind the large one, there will be a ladies' room and a kitchen. There are four exit doors provided, near the four corners of the church, besides the main doorway, which occupies the first stage of the main entrance gable in the front elevation facing the public road. The doorway is a double one, divided by a moulded stone shaft carrying the stone filling in tympanum, with its recessed and pierced panels enriched with cusped work, all enclosed in a recessed arch of four orders, the members of which are mounted or carved. The hood mouldings spring from square shafts, panelled and enriched with simple canopy work surmounted by carved terminals. The middle stage over the doorway is occupied by the large six-light window over the back gallery, lighting the nave, and filled with cusped tracery in two orders, the whole flanked by a group of buttresses on each side, plain in the lower stages, but treated with angle shaftings above, and having gable tops surmounted by stone terminals with carved crockets and finials. The upper stage of the gable is divided into panels with angle shafts starting from an embrasured cornice, some of the panels being enriched with cusped sinkings, and the terminals carried above the skewes and finished after the manner of the shafts in the buttresses. The shaft in the centre is finished at the apex of the gable with a foliated stone cross. The side elevation towards the proposed new road is more simply treated. The nave of the church in its length being divided into five bays, two of these are taken up by the gable transepts, with two large four-light windows, and the next two bays by the three-light windows opening into the nave. The fifth bay is taken up by the gable of the staircase; the divisions are accentuated by buttresses gabled and weathered in several stages at the transepts, and finished with angle shafts gabled and carved, and the beads of the windows are filled with tracery. On the axis of the transept roof the main ventilator trunk pierces the ridge of the main roof, and a flèche covers the body of the ventilator. The choir is much narrower in span than the nave, and is roofed at a lower level, the upper stage of the gable being occupied by a large five-light window, filled with cusped tracery, and flanked by buttresses finished with gabled tops. All the roofs will be covered with Westmoreland slates, and finished with red tile ridges. The heating is effected by the hot-water low-pressure system. The gas-fittings will be specially designed of hammered iron. There is sitting accommodation for 895, including back gallery, choir, and elders' stalls, and the total cost is expected to be a little over 6,000*l.* The contractors are as follows:—Masons, Allan & Baxter; plumbers, Moyes & Son; gas-fitters, D. & G. Graham; plasterers, W. & W. Smith; glaziers, Millar, Steele, and Kirk; painter, William Haddow; slaters, John M'Owat & Son; heating, A. & J. Boyd & Son; carvers, Dawson & Sheriff; and wrought-iron plates, James Milne & Son, Limited. The architect is Mr. W. G. Rowan, of Glasgow.

CHAPEL, DONALDSON'S LODGE.—The foundation-stone of a new Primitive Methodist Chapel at Donaldson's Lodge, near Cornhill-on-Tweed, was laid on the 13th inst. The contractors for the building are Messrs. Elliot & Son, Berwick-on-Tweed, and they are carrying it out under the superintendence of the architect, Mr. George Reavell, jun., of Alnwick.

NEW POLICE BARRACKS AT GLASGOW.—The new police barracks which have been erected in Great Clyde-street, Glasgow, were on the 14th inst. opened by Councillor Gray. Built from plans by Mr. A. B. M'Donald, the City Engineer, the barracks have a front elevation to the Clyde, are four stories in height, cover 720 square yards, and are estimated to cost about 10,000*l.* Accommodation has been made for the housing of eighty unmarried constables. The barracks have been erected in the central district of the city.

NEW CHURCH AT BLAENAVON, MON.—On the 15th inst. the memorial stone of a new church at Cotcha, Blaenavon, was laid by Mr. R. W. Kennard (on a site presented by the Marquis of Abergavenny). The memorial stone was of Forest of Dean stone. The church is designed in the Early English style, and will seat about 250 persons in open pews. The walls are of local stone, with Forest of Dean stone dressings. The contract for the church has been entrusted to Mr. John Burgoyne, builder, of Blaenavon, who is carrying out the same from plans prepared by, and under the supervision of, Mr. E. A. Lansdowne, architect, Newport, Mon. Mr. Box, of Blaenavon, is acting as clerk of works.

NEW CHURCH AT COGAN, SOUTH WALES.—A new church is about to be built at Cogan, on a site adjoining the main road to Penarth, given by Lord Windsor, who has also given 500*l.* towards its erection. The total outlay, including fencing of site, will be about 2,500*l.* The contract has been let to Mr. W. Richards, contractor, Barry. The architects are Messrs. Kempson & Fowler, Llandaff.

WESLEYAN CHURCH, GILBERDYKE YORKSHIRE.—Memorial stones of a new Wesleyan church and school were recently laid at Gilberdyke. The internal measurement and proportions are:—Church, 45 ft. by 27 ft. 6 in.; schoolroom, 37 ft. 3 in. by 17 ft. 9 in. The church is to accommodate 250, and the rostrum being moveable on wheels, additional room can be had to seat 250 more on special occasions. The style of architecture is Gothic. Mr. W. Stothard, of Manchester, is the architect; the builder being Mr. G. H. Walters, of Hull.

NEW CHURCH, CHARLTON, DOVER.—The new church of St. Peter and St. Paul at Charlton, Dover, was consecrated on the 19th inst. by the Bishop of Dover. Mr. James Brooks, of London, was the architect, and Mr. C. Wise, of Deal, the builder. In the *Builder* for May 30, 1891, we published a view of this church, together with elevations, plan and sections, and also a short description.

SANITARY AND ENGINEERING NEWS.

MAIDENHEAD SEWAGE DISPOSAL SCHEME.—On the 30th ult. Mr. Rienzi Walton, C.E., Local Government Board Inspector, held an inquiry at the Town Hall, Maidenhead, relative to the application of the Corporation for permission to borrow 30,000*l.* for drainage and sewage purification works. The mayor, with the town clerk and most of the council, were in attendance; the Great Western Railway Company, who are very large ratepayers, were also represented. Mr. C. Nicholson Lailey, C.E., of Westminster, the engineer of the proposed scheme, gave information as to the size and length of the sewers—amounting to about fourteen miles—and stated he proposed to treat the sewage by the International Company's system of precipitation by ferozone and filtration through polarite beds. Dr. Angell, F.I.C., described the chemical aspect of the system, and said that the effluent would satisfy the Thames Conservancy. The sewage is at the present time disposed of by broad irrigation, but it is stated that the land treatment has proved unsatisfactory, and many complaints having been made by the Thames conservancy as to the bad effluent coming from the land, the Conservancy at length called upon the authorities to comply with the Rivers Pollution Act. There was practically no opposition. Mr. Smith, on behalf of the Great Western Railway Company, expressed a wish that the tanks should be put as far from the station as possible, and this will, no doubt, be done. The site was afterwards visited by the Government Inspector.

HEATLEY (CHESHIRE), MAIN DRAINAGE SCHEME.—On the 13th inst. Colonel C. H. Luard, R.E., Inspector to the Local Government Board, held an inquiry at the Lynn Local Board office as to this scheme. The plans were presented and described by the Clerk and the consulting engineer, Mr. G. Herbert Bayley, A.M.Inst.C.E., who pointed out that on account of the very flat character of the district to be drained, he had advised the board to adopt the "Shone" system. There will be one central ejector station delivering the sewage under pressure into the existing system of sewers, and so on to the Statham sewage farm, two miles down the river. The air compressors will be placed at the Authority's gas-works. Owing to the wet subsoil and proximity to the river Bollin, it has been decided to use Doulton's patent-joined stoneware pipes. The amount of the loan sought is 3,300*l.*, and there was no opposition. The Colonel subsequently inspected the whole of the district under consideration, and afterwards visited the Board's sewage farm.

GORTON SEWAGE SCHEME.—On the 15th inst., Mr. J. S. Smith, C.E., one of the Local Government Board Inspectors, held an inquiry into an application by the Gorton Local Board for sanction to borrow 30,000*l.* for works of sewerage and sewage disposal. Mr. Bidder, Q.C., and Mr. Sutton, instructed by Messrs. Hall, Son, & Lord, solicitors, appeared in support of the application, and Mr. J. Addison, Q.C., M.P. and Dr. Parkhurst watched the proceedings on behalf of the Manchester Corporation. Mr. Bidder, after explaining the object of the inquiry, said the population of the district was 16,000, and it was already effectually sewered, but the sewage flowed totally untreated into the Gore and Corn Brooks. The area of the works was to be 8 or 9 acres, but owing to the high price of land in the district, and it being quite unsuited for sewage treatment it was proposed to deal with the sewage first by chemical precipitation, and then by filtration through polarite beds. Three precipitation tanks, each of a capacity of 409,275 gallons were to be provided, and six polarite filters. The sludge they intended to press. Mr. Bidder stated that as a result of their observations they were confident of being able to obtain by the polarite system an effluent, which he might say had never yet been obtained by any other process. Dr. Burghardt, Analytical and Consulting Chemist at the Victoria University, Manchester, was called in support of the scheme, as also Mr. J. Carter Bell, Borough Analyst for Salford, who gave the results of analyses of effluents from Swinton, Pedlebury, and Royton, where the polarite system is in operation. These analyses were made for the Salford Corporation, and Mr. Bell stated they were of extremely high purity and satisfactory in every respect. The proceedings occupied the whole of the day, and were watched with great interest by the officials and members of the Corporation of Manchester, in view of steps which are about to be taken in connexion with the purification of the entire watershed of the River Irwell.

DOCK EXTENSIONS IN LIVERPOOL.—According to the *Liverpool Post*, the new branch of the Canada Dock will shortly be ready for steamship accommodation. The contract for excavation was let to Messrs. Eckersley, Godfrey, & Liddelow, of London, who commenced operations in November, 1890. They had to remove about 700,000 cubic yards, consisting largely of clay. The massive concrete walls of the dock are completed, but some important work has yet to be done in connecting the main dock with the branch, and when this is accomplished the water area will be increased from about eighteen to thirty acres. The depth of this new branch will be 16 ft. below the datum of the old dock sill, the deepest of any dock that has yet been completed in Liverpool. The new Canada lock will be 600 ft. long and 100 ft. wide, with a sill 13½ ft. below the datum. This entrance will, it is expected, be ready in the course of next year. The latest steamer added to the Atlantic trade, the *Campania*, will easily be accommodated at the new Canada branch. On the south side of this dock there will be double story sheds 1,400 ft. long and 95 ft. wide, to be fitted with Lyster's patent roof cranes. On the north quay of the dock, where there is more land, sheds of a single story, 1,100 ft. long by 125 ft. wide, will be erected. The estimated cost of the branch dock with its sheds is about 300,000*l.*

FOREIGN AND COLONIAL.

FRANCE.—There is a talk of instituting a School of Art for Young Girls in the part of the Pavillon de Flore which has for some years been occupied by the Préfecture of the Seine. This new building will be laid out on the model of the school in the Rue Bonaparte.——The first five days' sale of the Spitzer collection has produced a sum total of 1,964,220 francs.——There is to be an exhibition in the Georges Petit Gallery of the works of the landscape painter, C. Delpy.——The Union Centrale des Art Décoratifs is preparing, at the Palais de l'Industrie, an exhibition of enamels of the painter, Claudius Popelin, who died about two years ago.——Next month an exhibition is to be opened, at the École des Beaux-Arts, of portraits of authors of the century. ——MM. Maxence, Mitrecey, Deschenaux, Larée, Foreau, Thiérol, Ronault, Charbonneau, Trigoulet, and Gainier, are the students admitted by the jury of the École des Beaux-Arts to enter for the first competition for the Prix de Rome, in the section of painting.——The marble statue of Lazare Carnot, by M. Cougny, has just been placed in the state-room of the Ministry of War.——The Carnavalet Museum has just acquired a curious and interesting picture giving a general view of Paris in 1630, in the reign of Louis XIII.——On May the 21st a monument to Jules Grévy, by M. Falguière, will be inaugurated at Dôle (Jura). The former President of the Republic is represented standing, stretching his right hand towards a flag which is held out to him by a female figure symbolising France, standing below the pedestal and crowned with the Phrygian cap.——The Prefect of the Seine has commissioned M. Poussin, architect, to construct at Montesson (Seine-et-Oise) a penitentiary school intended to replace the prison for youthful criminals known as the "Petite Roquette." The works will commence shortly.——The Chamber of Commence of Paris has opened a competition for the construction of a commercial school in Rues Condorcel and Bochar-de-Sarron.——The General Council of the Loire district has instituted a competition for the building of a Hôtel de Préfecture at St. Etienne.——The Society at Dunkerque "pour l'encouragement des lettres et des arts" is organising an art exhibition to be held at Dunkerque from July 14 to September 17. ——The General Council of the Côte d'Or district has voted the erection of a statue at Dijon to the memory of Pierre Joigneaux, a French politician of some eminence, and formerly Senator for the Department.——A bronze statue of Joan of Arc is to be erected in the principal public place at Chinon; it is the work of the sculptor Roulleau, and figured in the Salon des Champs Elysées last year. The pedestal will be executed from the designs and under the direction of M. Deglane, architect, and a former holder of the Prix de Rome, ——The death is announced of the painter Germain Ribot, son of the more celebrated painter Théodule Ribot, who died two years ago.——We also hear of the death of Mdme. Etienne Dujardin, *née* Marie Pétiet, a painter of portraits and *genre* subjects which have been much remarked in the Salons from 1870 to 1890. Her husband is a painter of talent and now also a member of the Chamber of Deputies.——The Académie des Beaux-Arts has awarded the Duc prize, given every five years to encourage the higher studies in architecture, to M. Émile Camut, architect, for his work on the enlargement and restoration of the thermal establishment at Mont-Dore.——In the Service d'Architecture of the Municipality of Paris four architects, MM. Ginain, Vaudremer, Train, and Varcollier, have been retired on the superannuated list, and their places are filled by MM. Calinaud, Dubernal, Durand, and Ulmann.

BERLIN.—Emperor William's present to the King of Italy, on occasion of his silver wedding, is a statue representing "Italy," the body of which is of solid silver, and the ornamental work to a great extent in other precious metals and stones. The sculptor, Reinhold Begas, is responsible for the designs, and Herr G. Lind was the goldsmith.——The old houses on the "Schlossfreiheit" which have o make room for the proposed National Monument are now being pulled down.——At last the extension of the General Post Office is to be taken in hand. A large site in the Leipziger Strasse is being cleared, and the actual works will see their commencement next month.——Among the several important bridges in course of erection, the new Frederick Bridge, said to be a good example of bridge architecture. A model of the bridge has been sent to the Chicago Exhibition. Reg. Bm. Otto Stahn is the architect, and the City Engineer, Dr. Hobrecht, is responsible for the construction.——The official report on the experiments with "fire-proof" materials to which we alluded in a former number has now been published. It consists of some forty pages of text of highly interesting reading, to which are added numerous reproductions from photographs and drawings. The editors are Chief Officer Stude, of Berlin Royal Police Fire Brigade, and "Brandinspector" Reichel, a senior officer of the same force.——We regret to announce the death of "Wirkl. Geh. Rath." Schneider, who was at the head of the Railway Department of the Prussian Ministry of Public Works. Herr Schneider, who died at the age of seventy-two, only retired from his important post some six months back. His retirement from office was considered a great loss to the country. He was one of the most highly-esteemed and popular officials in Prussia, whose name was also well known outside of his country.

SIGMARINGEN.—One of the finest wings of the historical castle at Sigmaringen was destroyed by fire last week, the cause of the outbreak being negligence on the part of a workman who was fixing some wiring for the electric lighting of the block. Most of the art treasures for which the castle is famous were fortunately in the main block, which was cut off from the wing on fire by wooden doors well covered with sheet iron. The castle, which is beautifully situated on some high rocks on the banks of the Danube, has a long and interesting history. There has apparently not been a serious fire in the place since the middle of the seventeenth century. In 1885 a thorough renovation of the castle was commenced, and among the improvements suggested was the electric installation, which was to lessen risks of fire, but has now been indirectly the actual cause of one.

THE NEW EMPIRE THEATRE, NEW YORK.—The *New York World* recently gave a description of the new Empire Theatre, situate in Broadway and Fortieth-street. The seating capacity is 1,100. The theatre is to be heated "in much the same way as the new Broadway Theatre. Pipes will conduct the hot or cold air under the seats, and the supply can be regulated by the occupants of the seats. The theatre will have a perfect system of ventilation, and the scenery on the stage will be protected from fire by a patent sprinkling apparatus." The architect's name is not mentioned.

Y.M.C.A. BUILDING, SAN FRANCISCO.—The *San Francisco Chronicle* of February 20 reports that the contracts for the erection of the new building of the Young Men's Christian Association were signed on the previous day, the architect, Mr. A. Page Brown, awarding the work to Mahoney Brothers for 202,000 dols. The site of the new building is at the north-east corner of Mason and Ellis streets.

MISCELLANEOUS.

PRESENTATION TO MR. CHARLES FOWLER, F.R.I.B.A.—A dinner of the District Surveyors' Association took place at the Holborn Restaurant on the 20th inst., the special object being the presentation of an address to Mr. Charles Fowler on the occasion of his retirement from the office of District Surveyor. Mr. Fowler was for many years Honorary Secretary to the Association, and subsequently President and member of the Committee, and his able and energetic services in those capacities have always been highly appreciated by his comrades. Professor T. Roger Smith, the President, was in the chair. A large number of the District Surveyors and their friends attended, and among the invited guests were Dr. Longstaff, Chairman of the Building Act Committee of the London County Council, Mr. Blashill, Superintending Architect, Professor Kerr, &c. The address, illuminated on vellum, was presented to Mr. Fowler, who made a suitable reply. The usual toasts were duly given and responded to by the President, the Vice-President (Mr. Douglass Mathews), the Hon. Secretary (Mr. B. Tabberer), Dr. Longstaff, Mr. Blashill, Prof. Kerr, Mr. H. H. Collins, Mr. Rickman, and Mr. R. Plumbe. The proceedings were enlivened by music, and a very pleasant evening was passed.

ROMAIN REMAINS AT NEUSS.—According to the *Cologne Gazette*, the excavations at the ancient Roman Camp of Neuss (near Düsseldorf), which were taken in hand by the archæologist Constantine Coenen, have been attended with surprising success. It has been found that several roads traverse the area of excavation, and the barracks of two cohorts, on the thoroughfare between the *Prætorium* and the *Quæstorium*, have now been determined as well as another on the *via Principalis*, probably that of the Prætorian Cohort. These barracks are each about 80 mètres long, every maniple having a breath of 26 mètres. A room of 3½ by 5 mètres was allocated to every *contubernium* (or mess of from eight to twelve men), communicating with two others of smaller depth used for the storing of arms and baggage. The roads dividing the barracks are 4 mètres broad. The centurions' houses, situated on the return fronts of each barrack block, resemble in internal arrangements the Roman house as seen at Pompeii. The dwellings of the *comites* also showed what we now called Pompeian style as far as the mural decoration was concerned; whilst the *Prætorium*, a pretentious building, was more Grecian in its style of decoration, and had been adorned with and showed much statuary. The sculpture temple (80 mètres long) showed the typical plan. Underneath this building extensive cellars, some 3 mètres deep, were found, and in connexion with these special apartments for

the priests. A bath in the temple stood in direct connexion with an aqueduct from the Roman Canal, the course of which has been known for some time back. The supply of drinking water for the camp was naturally from the same source.

THE JUNIOR ENGINEERING SOCIETY.—At the last meeting of this Society, held at the Westminster Palace Hotel, Mr. Sidney Boulding, M. Inst. Mech. E., in the chair, a paper on "The Sanitary Engineering of Dwellings" was read by Mr. R. W. Newman, Student Inst. C.E., Mem. San. Inst. The author first showed how indispensable to satisfactory results efficient ventilation and disconnexion were, and proceeded to deal with the appliances employed in their attainment. These included various forms of traps, disconnecting chambers, sink and bath wastes, and overflow and safe pipes. The connexion of branch and main drains, the method of laying pipes, and the reasons for the absolute necessity of maintaining the invert true in line and gradient were next considered. On the subject of water-closets, the construction and working of the pan and hopper, valve, wash-out, flush-down, and long hopper closets, were passed in review. The characteristics of a good closet apparatus were:—Simplicity, power of self-cleansing, having no points where deposit could settle, when flushed out the whole surface to be scoured, and every part to be made of smooth and incorrodible material. In regard to the question of water supply, the necessity of placing cisterns in light and airy positions was mentioned, and their frequent cleansing insisted upon, reference being made to the Public Health (London) Act, 1892, which provides that "every local authority shall (not may) make provision for the proper cleansing of cisterns within their district." The paper concluded with a brief summary of the most common defects met with in the drainage of houses. The paper was illustrated by numerous diagrams, and a collection of models of various sanitary engineering appliances were exhibited, lent by Messrs. Doulton & Co.

COLLAPSE OF BUILDINGS IN BIRMINGHAM.—On the 18th inst., the roof of a building, known as the Argyle Dancing Rooms, Loveday-street, Birmingham, collapsed, bringing down also five small houses in an adjoining court, and burying their occupants under a quantity of *débris*. The fire-brigade and police extricated three adults and four children, one an infant. They were all sufficiently injured to be admitted to the hospital.

THE FIRE IN DOCTOR'S COMMONS.—The fire at Messrs. Judd's premises, which broke out early on Good Friday morning, afforded a proof of the utility of fireproof floors. The ground floor of the main warehouse was constructed by Messrs Homan & Rodgers, and not merely resisted the intense heat caused by the fire above and below, but remained intact, sustaining the *débris* of the four upper floors, printing machinery, walls, &c., piled up to a height of some 30 ft.

BRITISH MINING STATISTICS FOR 1892.—The mining statistics of Great Britain for 1892, contained in the "Summaries of the Statistical Portion of the Reports of Her Majesty's Inspectors of Mines," have just been issued. We learn from them that the output of minerals last year reached a total of 191,954,908 tons, against 197,603,592 tons in 1891, which shows a decrease for 1892 of 5,738,684 tons, or 2·89 per cent. Of this output, 181,786,871 tons was coal, against 185,479,126 tons in 1891, a decline of 2,692,255 tons, or nearly 2 per cent. The production of ironstone was only 5,644,486 tons, against 7,229,150 tons in the preceding year, which shows that it fell off by 1,584,644 tons, or nearly 22 per cent. The total number of persons employed in and about the mines, inclusive of those at work on private branch railways and tramways, and of those engaged in washing and coking coal on premises adjacent to or belonging to the mines, was 721,803, against 707,411 in 1891, which exhibits a decrease of 14,397, or 2 per cent. Exclusive of those employed in the two latter industries, the number of persons employed in mining was 702,466, which, compared with 1891, when 687,878 persons were employed, is an increase of 14,588, or 2·1 per cent. The total number of fatal accidents being 862, and of deaths 1,034, there was thus a decrease of 99 in the former and of 4 in the latter category compared with 1891. There was one death for every 679 persons employed, against 668 in 1891. There was one death to every 195,473 tons of minerals raised, against 201,934 tons in 1891, and one fatal accident to every 235,817 tons, against 217,007 tons in the preceding year. The latter ratio was thus more favourable, and the former more unfavourable, than in 1891.

BRITISH OUTPUT OF OPEN-HEARTH STEEL.—The statistics just issued by the British Iron Trade Association show that the quantity of open-hearth steel ingots produced in Great Britain last year amounted to 1,418,830 tons, against 1,514,538 tons in 1891. The decrease last year was consequently 95,708 tons, or 6·3 per cent. There was an almost general decline of production in all the districts making open-hearth steel, the only exception being Staffordshire, where there was an increase of output. Of manufactured products in open-hearth steel, the largest quantity consisted of plates and angles, 577,527 tons being produced. The production of open-hearth steel manufactures included 231,510 tons of bars (almost wholly tinplate bars), tees, and forgings, 160,561 tons of blooms and billets, 72,264 tons of slabs, 24,075 tons of rails, and smaller quantities of castings, tires and axles, sleepers, &c. Scotland produced the largest tonnage of open-hearth steel manufactures (417,016 tons), being followed by the north-east coast, Wales, Sheffield, and Leeds, Lancashire and Cumberland, and Staffordshire, which latter produced only 57,308 tons.

CAPITAL AND LABOUR.

STONEMASONS' STRIKE, CARDIFF.—On Monday evening a meeting of the Cardiff Master Builders' Association was held at the Angel Hotel, when the dispute with the stonemasons, who are still out on strike, was discussed, with the result that the hon. secretary (Mr. W. M. Shepherd) was instructed to write to Mr. F. G. Edmonds, of the Operative Masons' Society, informing him that the wages and code of rules which the master builders are prepared to offer are those now governing the carpenters and joiners, bricklayers, and plasterers, with the following additional rule:—"That no worked stone be brought into the town for the purpose of being used on contract work, except landings, steps, plain and chamfered coping, and Yorkshire paving; also granite and marble." This leaves the position practically unchanged.—*Western Mail.*

THE BUILDING TRADE AT PONTYPRIDD.—A conference of representatives of employers and workmen engaged in the building trade was held on the 22nd inst. at the "New Inn" Hotel, Pontypridd, to consider the notices served by employers demanding a reduction in Wales of 1d. per hour on and after May 1 next. After consultation, a compromise was effected by splitting the difference between the parties, so that from the date mentioned the wages will be reduced from 9d. to 8½d. per hour.

MEETINGS.

FRIDAY, APRIL 28.

Architectural Association.—Mr. P. Gordon Smith on "Hygiene in its Application to the Arrangement of Buildings." 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. W. Handcock on "Fire-Risks of Electric Lighting." 7.30 p.m.

SATURDAY, APRIL 29.

Architectural Association.—Visit to the additions to the *Morning Post* premises, Wellington-street, Strand, by permission of the architect, Mr. H. O. Cresswell. 3 p.m.

Incorporated Association of Municipal and County Engineers.—Midland Counties District Meeting, to be held at Dudley.

Junior Engineering Society.—Visit to the Lea Bridge Pumping Station of the East London Water Works Company. 3 p.m.

St. Paul's Ecclesiological Society.—Visit to the Churches of St. Philip, Stepney, at 3.50 p.m., and St. Augustine, Stepney, at 4.30 p.m.

MONDAY, MAY 1.

Royal Institute of British Architects.—Annual General Meeeting, for Members only, to receive the Annual Report of the Council. 8 p.m.

Society of Arts (Cantor Lectures).—Mr. Lewis F. Day on "Some Masters of Ornament."—IV. 8 p.m.

Society of Engineers.—Mr. Edmund Burrows on "Blake's Bridge, Reading." 7.30 p.m.

Liverpool Architectural Society.—Annual General Meeting: Closing Address by the President, Mr. T. Harnett Harrisson. 6.30 p.m.

TUESDAY, MAY 2.

Institution of Civil Engineers.—Mr. M. B. Jamieson on "Mining and Ore-treatment at Broken Hill, New South Wales." 8 p.m.

Society of Arts (Foreign and Colonial Section).—Mr. E. Delmar Morgan on "Russian Industrial Art." 8 p.m.

Society of Biblical Archæology.—8 p.m.

Glasgow Architectural Association.—Mr. J. A. Macara on "Monuments and Memorials of the Dead." 8 p.m.

WEDNESDAY, MAY 3.

Institute of Builders.—Annual Dinner, to be held at the "Grand Hotel," Charing Cross. 6 p.m.

Society of Arts.—Professor Silvanus P. Thompson on "Practical Electrical Problems at Chicago." 8 p.m.

Society of Biblical Archæology.—4.30 p.m.

Institution of Civil Engineers of Ireland (Dublin).—Meeting in the New Hall, 35, Dawson-street.

THURSDAY, MAY 4.

Institution of Civil Engineers.—The first James Forrest lecture will be delivered by Dr. William Anderson, entitled "The Inter-dependence of Abstract Science and Engineering." 8 p.m.

Society of Antiquaries.—8.30 p.m.

FRIDAY, MAY 5.

Junior Engineering Society.—Mr. A. H. Bromly on "Gold Mining Machinery." 8 p.m.

SATURDAY, MAY 6.

Edinburgh Architectural Association.—Visits to Nunraw.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

5,694.—FIRE-PLACES: *F. F. Bond.*—This invention relates to improvements in open fire-places, stoves, and grates; its object being to obtain a greater amount of heat, less consumption of fuel, and the more perfect distribution of the heat throughout the room. This is effected by making, in open fire-places or stoves, the sides and backs of tiles, glazed bricks, or any other non-conducting material, preferably having a polished surface. The tiles, or other material, are arranged at a suitable angle to radiate the heat into the room. The specification also provides for a detached fire-box, having openings on all its sides for the purpose of cleanliness.

7,683.—VENTILATORS: *R. Mushet.*—This invention has reference to improvements in the construction of ventilators of the hooded class, principally intended for use on board ship, but applicable also to ventilators for general purposes, and to chimney cowls, and has for its object increased efficiency by improving the draught through the greater velocity given to the air currents. It consists, principally, in fitting the ventilators with short conoidal rings, or nozzles, around the ordinary hoods, either inside or outside their mouths; also with rain or spray-collecting and discharging gutters, and drop-catches or hooks.

1,404.—FLUSHING SYPHONS: *J. Merrill.*—This invention is for improvements in automatic flushing syphons, and consists in constructing in the long leg a chamber containing a tipping bucket in combination with a trapped outlet.

23,490.—METALLIC CEILINGS: *L. L. Sagendorph.*—The primary object of this invention is to construct or form the corners of metallic ceiling plates (having raised marginal borders or mouldings) in such a manner as to obviate the necessity of cutting away the metal at the said corners as now commonly done. The improved ceiling plates have a continuous raised marginal border or moulding, these mouldings extending beyond their point of intersection forming projecting portions at the corners of the plate. There is also preferably an inner continuous raised bead or corrugation near the marginal raised portion, to add strength and rigidity to the plate to prevent buckling of the latter. In placing the plates in position on the ceiling the projecting portions will overlap the two marginal beads on adjacent plates the corners thus formed being covered with rosettes, each of which is provided with arms of a circular outline in cross-section, the latter fitting over the mouldings or beads, and also over the two projections on the top plate. The rosettes are retained in place by a single nail driven through each of them, and through the overlapped portions of the mouldings at their intersecting points.

NEW APPLICATIONS FOR LETTERS PATENT.

APRIL 10.—7,283, F. Hess, Composition for Glueing Purposes.—7,306, G. Body, Metallic Double Rebated and Tongued Sash Stile for the Pulley and Pivot Principle.—7,309, R. Cockroft, Fastenings whereby Window-cords may be secured to the Stiles of Window-sashes.—7,312, T. Hall, Masons' and Builders' Scaffolding.—7,313, J. Mercer, Machine for Punching Pinholes in Hand-made Tiles.—7,315, E. Penn, Window-fasteners.—7,335, J. Kornder, Nail-driving Apparatus.

APRIL 11.—7,397, G. Delalaude, Lever Window-fastener.—7,403, C. Loetscher, Mortising Machines.—7,425, F. Willis, Construction of Fireproof Floors.

APRIL 12.—7,447, J. Sellars, Applying Cement, &c., to Surfaces.—7,456, T. Whittaker, Brick Presses.—7,462, P. Spencer, Centres for Setting out Work.—7,473, J. Shaw, Ventilators.—7,475, F. F. Hitchmough, Sash Pulley.—7,484, J. Russell, Cooking-stoves or Ranges.—7,499, W. Sykes, Compositions suitable for Paving, Building, &c.—7,504, R. Astley, Construction of Fireproof Floors.—7,506, W. Gibson, Fireplaces.

APRIL 13.—7,553, W. Parnall, Shop Fittings.—7,567, H. Jukes, Water-closet Bowls.

APRIL 14.—7,620, W. Johnson, Machinery for Manufacturing and Pressing Bricks.—7,621, H. Worrall, Window-fastener.—7,627, W. Monro, Bolt for Doors, Cupboards, &c.

APRIL 15.—7,736, J. Schultz, Roofing.

PROVISIONAL SPECIFICATIONS ACCEPTED.

2,974, D. Taylor, Ranges and Grates.—3,551, E. Burt' Slide-rule for Cubing Timber, &c.—3,596, W. Gould, Locks or Latches for Doors.—3,629, J. Duckett & Son, Limited, and J. Bullock, Smoke Consuming Apparatus.—3,874, S. Dixon, Chimney or Ventilating Shaft Tops.—4,178, R. Taylor, Drying Clay, &c.—4,470, W. Chapman, Smoke Consuming Stove.—4,707, H. Houghton, Attaching Bib-Screw down Water Cocks to Lead Pipes.—5,114, B. Coulthurst and others, Sanitary Pipes.—5,193, E. Smith, Wood Cutting Tools.—5,437, F. Denyer, Manhole Covers for Sewers.—5,466, J. & F. Jones, Drain Traps, &c.—5,642, M. Syer, Syphon Water-waste Preventer.—5,680, C. Darrah, Syphon Flushing-out Cistern for Water-closets.—5,851, G. Mecenero and G. Lenturi, Artificial Marbles.—5,992, W. Peyton, Stone or Fire-grate.—6,038, J. Fry, Wood Screws.—6,052, M. Clark, Stoves, Ranges, and other Fire-places.—6,173, J. Nicol, Window-sashes.—6,177, T. Pearson, Galvanised Corrugated Sheets for Roofing.—6,314, C. Brand and others, Scoria or Slag Blocks for Paving, Masonry, &c.—6,429, D. and J. Keith, Fittings for Windows.—6,547, H. Hansen and W. Walker, Ventilators.—6,589, D. Donald and J. Sime, Ventilators.—6,661, Craven, Dunnill, & Co., and F. Smith, Tiles.—6,761, W. Anstey, Gas Brackets.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

7,226, C. Hoho and E. Lagrange, Sash Locks.—8,790, B. Fowell, Boilers for Heating Public Buildings and Greenhouses.—9,281, J. McGlasham, Ornamentation and Decoration of Walls, Ceilings, &c.—10,341, H. Sankey and others, Decorating Walls.—10,963, J. Day, Drainage and other Socket-pipes to facilitate Jointing.—11,022, T. Winter, Cowl.—11,215, F. Shuffrey, Window-sash Fastener.—395, G. Ayling, Step Ladders.—1,422, T. Avill and others, Mitre Cramp.—2,944, W. Bate, Syphon Discharge-pipes.—2,945, W. Bate, Floats for Ballcocks.—5,165, G. Hardingham, Syphon Automatic Flushing Apparatus.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

APRIL 12.—By *W. J. Coltman* (at Islington): 101, Church-rd., Islington, u.t. 45 yrs., g.r. 5*l.*, r. 43*l.*, 400*l.*; 175, Church-rd., u.t. 47 yrs., g.r. 6*l.* 10s., r. 40*l.*, 385*l.*; 115, Bemerton-st., u.t. 51 yrs., g.r. 6*l.*, r. 46*l.* 16s., 250*l.*; 23, Valentine-rd., Hackney, u.t. 52 yrs., g.r. 5*l.* 5s., r. 36*l.*, 385*l.*; "Docwras Warehouse and Bleaching Works," King Henry's Walk, Ball's Pond, f. 2,150*l.*

APRIL 17.—By *Wagstaff & Warman:* 30 and 32, St. James's Walk, Clerkenwell, u.t. 13 yrs., g.r. 5*l.*, r. 62*l.*, 385*l.*; i.g.r. of 110*l.*, William-st., Notting Hill, u.t. 50 yrs., g.r. 54*l.*, 710*l.*—By *J. Hibbard & Sons:* 9 and 11, Balcorn-st., Hackney, f., 370*l.*; 28 and 30, Arkim-st., Battersea, u.t. 64 yrs., g.r. 5*l.*, 245*l.*—By *Carey & Lewis:* 5, 6, and 7, Elm Bank, Crouch End, u.t. 88 yrs., g.r. 19*l.* 12s., 975*l.*; 10 to 13, Elm Bank, u.t. 88 yrs., g.r. 25*l.* 18s., 1,305*l.*; 1, Bergholt-cres., Stamford Hill, u.t. 92 yrs., g.r. 7*l.* 10s.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Board School	Poulton (Morecambe) School Board	10 and 5 guineas	May 9
Electric Lighting of Town	Winchester T.C.	30*l.*	May 20
Sewage Disposal Scheme	Ludlow Corporation	25*l.* 15*l.* 10*l.*	May 30
*Public Baths	Leeds Corporation	.....	May 31
Laying-out Vacant Plot of Land	Wolverhampton T.C.	10*l.*	June 24
*Sewerage of Village of Borstal	Rochester Corporation	26*l.* 8*s.* and 10*l.* 10*s.*	June 26
*Sewerage Works	Leipsic Town Council	5,000, 3,000, and 2,000 Marks	Oct. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Broken Granite	St. Alban's Corp.	*Official*	May 2
Seven Dwelling-houses, Flimby, Cumberland	J. Mossop	.....	do.
Five Houses, Leeds	.....	R. Wood	do.
Dispensary and Residence	Tullamore Union	J. J. O'Callaghan	do.
Cottage, Offices, Stabling, Store, &c. New Brompton	Messrs. Rigden	.....	do.
School Buildings, Hurst, near Ashton-under-Lyne	Rev. T. B. Dixon	T. George & Son	do.
*Disinfectants, Pipes, and Lime	Leyton Local Board	W. Dawson	do.
Additions to Croft House, Holywood, Ireland	R. L. Patterson	Young & Mackenzie	do.
Main Sewer, Tank, &c.	Ulverston U.R.S.A.	J. Greenwood	do.
*Iron Railing and Gates	Torquay Corporation	H. O. Garrett	do.
Additions to Offices	Hanley Union	C. E. Scrivener	May 3
Extension of School Buildings, Halifax	Trustees of St. George's School	.....	do.
Erection of Chapel, Risca, Mon.	The Trustees	T. Rowland	do.
Restoration of Harbour Walls, &c.	Swansea Harb. Trus.	A. P. Schenck	do.
Restoration of Church, Llanwrda, Carmarthen	Rev. J. Jones	S. W. Williams	do.
Two Houses and One Shop, Sandhill	G. H. Glasby	.....	do.
Vicarage and Offices, Bettwscyced	.....	P. M'Intyre	do.
Villa Residence and Outbuildings, Eskdale, Cumberland	.....	Moffat & Bentley	do.
Laying Pipe Sewers	Eccles Corporation	A. C. Turley	do.
Additions to Residence, Thurlstone	Governors of Penistone Grammar School	Senior & Clegg	do.
Girder Bridges, Sleepers, &c. (London)	Bombay, Baroda, and Central India Ry. Co.	*Official*	do.
*Pier Painting	Southend-on-Sea Corp.	do.	do.
*Sewer and other Works	Cuckfield U.R.S.A.	W. Beach	May 4
*Painting Works at Workhouse	St. Saviour's Union	Jarvis & Son	do.
Flagging and Paving (two streets)	Blaydon Local Board	.....	do.
Residence, Whitgift	J. C. Bladworth	H. B. Thorp	do.
Dwelling-house, Morthoe	Mr. Dyer	.....	May 5
*Sanitary Works at Workhouse	St. George-in-the-East Guardians	Wilson, Son, & Aldwinckle	do.
*Firing Battery, Drill Shed, &c. Scarboro	Admiralty	*Official*	do.
*Offices for Goods' Depot, Sheffield	M. R. Co.	.....	do.
Additions, &c. to Workhouse, Edgware	Hendon Union	do.	May 6
Sewers (1,383 yds. brick, 1,100 yds, pipe)	Thornhill Local Board	J. C. Haller	do.
Engine House, Coal Store, &c. at Electric Lighting Station, Canton	Cardiff Corporation	W. Harpur	do.
Drainage and Water Supply Works, Hatherleigh	Okehampton R.S.A.	E. Appleton & Son	do
Church, Pennar, Pembroke Dock	.....	J. L. Fasey	do.
*Police Station, Boscombe	County of Southampton	J. Robinson	do.
Drill Hall, Instructor's Dwelling, &c. Llanrwst	.....	.....	May 8
Additions to School Buildings, Mardy	George Wynne	J. Rees	do.
Supplying and Laying of Cast-iron Pipes (six miles)	Ystradyfodwg Sch. Bd.	.....	do.
Widening Two Bridges	Preston U.R.S.A.	J. J. Myres	do.
*New Sewers	Welton Town Council	G. J. Carse	do.
*Norway Granite Kerb	St. Giles Bd. of Wks.	G. Wallace	do.
*Hospital for Infectious Diseases	Kingston-on-Thames Corporation	*Official*	do.
*Corrugated Iron Hospital	Willesden Local Board	do.	May 9
*Furniture for Free Library	Abercarn Local Board	do.	do.
Cast-iron Socket Pipes (240 tons)	Borough of West Ham	Lewis Angell	do.
Valves, Hydrants, &c.	Hunslet U.R.S.A.	J. H. Rhodes	do.
*Painting and Structural Work at Infirmary	do.	do.	do.
	Whitechapel Union	B. J. Capell	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Repair of Roads	Croydon Council	*Official*	May 9
Additions to School Buildings, near Bracknell	Warfield School Com.	.....	do.
School Buildings, Roseburn, Edinburgh	St. Cuthbert's & Dean School Board	R. Wilson	do.
Sewering, Kerbing, Channelling, &c. Castleford	.....	S. Shaw	do.
Widening, &c. Road, Llanedarne	Llandaff Highway Bd	J. Holdin	do.
Tramway Depot and Cottages	Plymouth Corporation	G. D. Bellamy	do.
*Blue Guernsey Granite	Boro of Croydon	W. Powell	do.
*Painting Works at Workhouse	Bethnal Green Union	*Official*	do.
*Extension of Cattle Market	Wellington (Salop) Market Co.	.....	May 10
*Erection Pig and Cattle Pens	do.	.....	do.
*Additions to Workhouse	Edmonton Union	T. E. Knightley	do.
*Tar Paving Works	Boro of Poole	.....	May 11
Dwelling House, Great Yarmouth	.....	S. Rivett	do.
*Electric Light Station	Salford Gas Committee	*Official*	do.
*Main Drainage Works	Moss Side Local Board	J. Bowden	May 12
Water Works Construction (large contract)	Barmouth Local Board	T. Roberts & Sons	do.
*Alterations, &c. to Hospital	Bromley & Beckenham Hospital Board	J. Ladds	do.
Renovation of Church, Magheragall, Ireland	Rev. H. Hastings	J. Hunter	do.
Road Metal, &c. (3,000 tons)	Bulmer West Highway Board	*Official*	do.
School Buildings, Luddenham, Foot	Warley School Board	C. F. L. Horsfall & Sons	May 13
*Erection of Schools	Brighton and Preston School Board	J. W. Simpson	May 16
*Making-up Roads	Acton Local Board	*Official*	do.
Iron Roof at Kingswear Station	G.W.Rly Co.	do.	May 17
*Paving Footpaths	Biggleswade Local Bd.	do.	do.
*Isolation Block at Schools	St. Pancras Vestry	A. & C. Harston	May 18
Granite Road Metal, &c.	Long Sutton Local Bd	*Official*	May 19
*Six Public Conveniences	Bournemouth T.C.	F. W. Lacey	May 22
*Alterations, &c. at Workhouse	Thakeham Union	Scott & Cawthorne	do.
*Hospital for Infectious Diseases	Birkenhead Corp.	C. Brownridge	do.
*Superstructure of New Asylum	Sunderland Asylum	G. T. Hine	May 27
*Keeper's Lodge, Canning Town	Borough of West Ham	Lewis Angell	May 30
*Erection of Two Blocks	Glamorgan County Asy.	Giles, Gough, & Trollope	May 31
Central Electric Lighting Station	Liege Town Council	*Official*	June 15
*Construction and Maintenance of Sewerage Works	City of Cape Town	Clement Dunscombe	July 29
*100 Flush Basins	Fowlers Sanitary Eng. Co. Ltd.	.....	No date
Mission Hall, Houses and Shops, Canton, Cardiff	.....	Habersham & Fawckner	do.
Construction of a Reservoir, Alverthorpe near Wakefield	Colbeck Bros.	A. Fawcett	do.
Church, Long Handborough, Oxford	.....	E. H. L. Barker	do.
Dwelling House, Stable, &c. Leeds	.....	P. Robinson	do.
Making, Forming, Draining Roads, Rodbourne, near Swindon	.....	Bishop & Pritchett	do.
Bank Premises, Elland	Huddersfield Union Banking Co.	E. M. Johnstone	do.
Additions to School Buildings, Whitby	.....	F. W. Dixon	do.
Two Dwelling-houses, Wakefield	Capt. M. J. C. Dennis	W. Watson	do.
School Buildings, &c. Baltinglass	Ashworth & Woolfenden	D. Ramsey	do.
Twenty-four Houses, Castleton	Kendal Corporation	.....	do.
Additions, &c. to Municipal Buildings		S. Shaw	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of Works	Boro of Pwllheli	.....	April 29
*Inspector of Nuisances, Surveyor, &c.	Ware U.R.S.A.	120*l.*	May 1
Gasworks Manager	Cardiff Gaslight and Coke Co.	200*l.* &c.	May 4
Electrical Engineer	Wolverhampton T.C.	300*l.*	May 6
*Surveyor, Sanitary Inspector, &c.	Sandgate Local Board	130*l.*	do.
*Boro Engineer's Assistant	Darwen Corporation	100*l.*	May 8
Clerk of Works	Aberdare Intermediate School Committee	2*l.* 5*s.* per week	May 9
*Inspector of Nuisances	Swansea Town Council	120*l.*	May 15
*Surveyor	Vestry of St. Mary, Newington	350*l.*	No date

Those marked with an Asterisk (*) are advertised in this number. *Competitions, p.* iv. *Contracts, pp.* iv., vi., vii., viii., ix, *and* xxv. *Public Appointments, p.* xxii.

480*l.*—By *Buckland & Sons:* "Stanwell Cottage," Stanwell, Middlesex, and 9 a. 3 r. 23 p., f., sold before auction; f. market garden land, 40 a. 2 r. 3 p., 2,065*l.*; "The Royal Hart Tavern," Ashford, f., 2,200*l.*; a plot of f. land, 200*l.*

APRIL 18.—By *A. W. Taylor & Co.:* 152, Trinity-rd., Tooting, f., 655*l.*; 154 and 156, Trinity-rd., u.t. 73 yrs., g.r. 16*l.*, r. 73*l.*, 595*l.*; 53 and 55, Brodrick-rd., u.t. 72 yrs., g.r. 12*l.*, r. 80*l.*, 640*l.*; 23, Parr-st., Hoxton, u.t. 15 yrs., g.r. 3*l.* 5*s.*, r. 30*l.*, 123*l.*; 20, Arlington-st., Islington, u.t. 34 yrs., g.r. 4*l.* 4*s.*, r. 34*l.*, 310*l.*—By *Lilley & Weston:* 24, Westbourne-pk.-cres., Harrow-rd., u.t. 57 yrs., g.r. 6*l.* 10*s.*, 240*l.*—By *Boyton & Pegram:* 57, 61, and 63, Strode-rd., Fulham, f., 900*l.*; 410 and 412, Fulham-rd., u.t. 41 yrs., g.r. 50*l.* 4*s.*, r. 128*l.*, 630*l.*—By *Hampton & Sons:* the lease of 15, Half Moon-st., Mayfair, u.t. 13¾ yrs., r. 250*l.*, including fixtures, 50*l.*—By *Debenham, Tewson, & Co.:* 18 and 20, Osborne-st., Whitechapel, f., r. 70*l.*, 1,260*l.*; 55, Belsize-rd., Hampstead, u.t. 51 yrs., g.r. 9*l.* 10*s.*, r. 50*l.*, 400*l.*

APRIL 19.—By *Furber, Price, & Furber:* "The Old King's Head," Poland-street, Oxford-street, f., r. 100*l.*, 2,475*l.*; 1 and 2, Salem Villas, Epping, f., r. 37*l.* 16*s.*, 520*l.*; 45, St. Ann's-rd., Notting Hill, f., r. 32*l.*, 440*l.*; 49 and 51, Linton-st., Islington, u.t. 34 yrs., g.r. 8*l.* 8*s.*, r. 70*l.*, 570*l.*; 12, New Charles-st., City-rd., u.t. 49 yrs., g.r. 6*l.*, r. 42*l.*, 350*l.*—By *Chadwick & Sons:* No. 341, Strand, f., r. 150*l.*, 5,300*l.*—By *J. H. Hunter:* 129, St. James's-rd., Holloway, u.t. 39 yrs., g.r. 2*l.* 10*s.*, r. 37*l.*, 350*l.*; 66, Nightingale-lane, Wandsworth, u.t. 88 yrs., g.r. 11*l.*, r. 60*l.*, 535*l.*; No. 293, Harrow-rd., u.t. 52 yrs., g.r. 9*l.*, r. 50*l.*, 500*l.*; f.g.r. of 10*l.*, Little Randolph-st., Camden Town, reversion in 39 yrs., 245*l.*—By *H. Donaldson:* 106 and 108, Prince's-rd., Notting Hall, f., r. 70*l.*, 900*l.*; 8, King Henry's Walk, Islington, u.t. 46 yrs., g.r. 5*l.*, r. 32*l.*, 265*l.*—By *E. Wood:* 220, Albany-rd., Camberwell, u.t. 61 yrs., g.r. 10*l.*, 260*l.*; f.g.r. of 9*l.*, Danby-st., Peckham, reversion in 73 yrs., 185*l.*; 63, Dorothy-rd., Battersea, u.t. 94 yrs., g.r. 6*l.* 10*s.*, 280*l.*; 1 and 3, Darley-rd., Wandsworth, u.t. 80 yrs., g.r. 6*l.*, 370*l.*; 77, Euston-st., Euston-sq., u.t. 26 yrs., g.r. 7*l.* 7*s.*, r. 40*l.*, 160*l.*; 8 to 32 (even), Grant-rd., Battersea, sold privately; 2, Sheepcote-rd., sold privately.—By *W. Bradly* (at Sevenoaks): 13 and 14, Granville-rd., Sevenoaks, f., r. 98*l.*, 815*l.*

APRIL 20.—By *Stimson & Sons:* F.g.r. of 74*l.*, Edmund-st., &c., Camberwell, reversion in 21 yrs., 2,320*l.*; f.g.r. of 60*l.*, Queen's-rd., Peckham, with ditto in 8 yrs., 1,920*l.*; f.g.r. of 17*l.* 10*s.*, Ormside-st., Old Kent-rd., ditto in 60 yrs., 450*l.*; f.g.r. of 16*l.* 17*s.* 6*d.*, Thornton Hill, Wimbledon, ditto in 69 yrs., 450*l.*; f.g.r. of 44*l.* 2*s.*, Champion-pk., Sydenham, ditto in 86 yrs., 875*l.*; i.g.r. of 80*l.*, Maxted-rd., &c., Peckham, ut. 54 yrs., g.r. 18*l.*, 1,075*l.*; i.g.r. of 24*l.*, Dennett's-rd., u.t. 57 yrs., g.r. 10*l.*, 240*l.*; i.g.r. of 112*l.*, Beaufoy-ter., South Lambeth, u.t. 78 yrs., g.r. 52*l.*, 1,000*l.*; i.g.r. of 203*l.* 5*s.*, Fentiman-rd., u.t. 78 yrs., g.r. 152*l.*, 835*l.*; i.g.r. of 16*l.*, Hanbury-ter., u.t. 78 yrs., g.r. 12*l.*, 60*l.*; f. rental of 100*l.* a year, Tidal Basin-rd., Victoria Docks, 1,800*l.*; 47, Brunswick-rd., Brighton, f., r. 70*l.*, 960*l.*; 2 to 24, King's-rd., Twickenham, u.t. 87 yrs., g.r. 66*l.*, 1,580*l.*—By *Blake & Dannatt:* "Holmhurst," Beacon-rd., Lewisham, f., 950*l.*—By *Farebrother, Ellis, & Co.:* 12 and 14, King-st., Westminster, f., area 1,000 ft., 2,700*l.*; "Wyberton House," Lee-ter., Blackheath, f., 5,000*l.*; a block of f. stabling, Boone-st., Lee, 1,200*l.*; 49, Farringdon-st., City of London, u.t. 59 yrs., g.r. 335*l.*, r. 1,150*l.*, 7,000*l.*—By *G. Trollope & Sons:* 54, St. George's-sq., Belgravia, u.t. 39 yrs., g.r. 24*l.*, 2,700*l.*—By *Ventom, Bull, & Cooper:* 16, James-st., Oxford-st., f., r. 75*l.*, 1,460*l.*; 148, Copenhagen-st., Islington, u.t. 48 yrs., g.r. 6*l.*, r. 40*l.*, 375*l.*—By *Newbon & Co.:* 94, Arlington-rd., Camden Town, f., r. 40*l.*, 670*l.*; 15, St. John's-pk., Holloway, u.t. 58 yrs., g.r. 8*l.* 8*s.*, 560*l.*; 46, Median-rd., Clapton, u.t. 71 yrs., g.r. 6*l.* 10*s.*, r. 32*l.*, 320*l.*; 12 and 13, Baker-st., Pentonville; and 16 and 17, Spring-st., u.t. 19 yrs., g.r. 10*l.*, 470*l.*; 14, Coleridge-rd., Finsbury-pk., u.t. 66 yrs., g.r. 9*l.*, r. 48*l.*, 1,600*l.*; i.g.r. of 105*l.*, Seven Sisters'-rd., u.t. 69 yrs., g.r. 16*l.*, 280*l.*; i.g.r. of 16*l.*, Alexandra-rd., u.t. 69 yrs., g.r. 2*l.*, 395*l.*—By *F. J. Bisley & Sons:* 43 and 45, Swan Lane, Rotherhithe, u.t. 67 yrs., g.r. 4*l.*, r. 36*l.* 8*s.*, 240*l.*; 10, 12, and 14, Faustin-pl., f., r. 35*l.* 2*s.*, 235*l.*—By *E. Simpson:* 17, Park Row, Greenwich, f., 465*l.*

APRIL 21.—By *Jones, Lang, & Co.:* 43, Colebrooke-row, City-rd., f., r. 63*l.*, 875*l.*—By *Geo. Gouldsmith, Son, & Co.:* "Buckingham Chapel," Palace-st., Westminster, f., area 2,967 ft.; 4,300*l.*; 6, South Eaton-pl., Belgravia, u.t. 31 yrs., g.r. 3*l.*, 2,700*l.*; 39, Wilton-cres., u.t. 31 yrs., g.r. 5*l.*, r. 430*l.*, 4,940*l.*; 19, Wilton-cres., u.t. 31 yrs., g.r. 12*l.*, 4,700*l.*—By *Curtis & Sharp:* F. land., Boreham Wood, Elstree, 4 a., 825*l.*; two plots of f. land, Rosendale-rd., Tulse Hill, 350*l.*—By *Baker & Sons:* 23, 24, 25, and 26, Victoria-road, Stoke Newington, u.t. 51 yrs., no g.r., r. 131*l.* 10*s.*, 1,025*l.*; 18, Victoria-rd., u.t. 51 yrs., g.r. 4*l.* 16*s.*, r. 32*l.*, and l.g.r. of 2*l.* 5*s.* a year, 260*l.*; 7, Bouverie-rd., u.t. 64 yrs., g.r. 3*l.*, 300*l.*; 17 and 19, Prince's-st., Walworth, u.t. 19 yrs., and a l.g.r. of 14*l.*—same term, 190*l.*; the f. residence "Clovelly," Brighton-rd., Redhill, and 25 and 27, Earlswood-rd., 1,800*l.*; 10, Lubeck-st., Battersea, u.t. 64 yrs., g.r. 4*l.*, 200*l.*; 41 and 43, Este-rd., u.t. 57 yrs., g.r. 10*l.*, 400*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	9/0/0	0/0/0
Teak, E.I. ..load	9/0/0	15/0/0
Sequoia, U.S.ft.cu.	2/3	2/6
Ash, Canada load	2/10/0	4/0/0
Birch, do.	3/0/0	4/0/0
Elm, do.	3/10/0	4/10/0
Fir, Dantsic, &c.	1/10/0	3/5/0
Oak, do.	3/0/0	5/5/0
Canada	5/10/0	7/0/0
Pine, Canada red	2/10/0	3/10/0
Do. Yellow	2/10/0	4/10/0
Lath, D'ntsic, fath	5/0/0	6/0/0
St. Petersburg	5/0/0	7/0/0
Deals, Finland 2nd & 1st std 100	7/0/0	9/10/0
Do. 4th & 3rd	6/10/0	7/0/0
Do. Riga	6/10/0	8/0/0
St. Petersburg, 1st yellow	10/0/0	14/0/0
Do. 2nd yellow	8/0/0	9/0/0
Do. white	8/0/0	10/0/0
Swedish	7/0/0	15/10/0
White Sea	8/0/0	16/10/0
Canada, Pine 1st	21/0/0	28/10/0
Do. do. 2nd	15/10/0	17/10/0
Do. do. 3rd &c.	7/10/0	10/5/0
Do. Spruce, 1st	8/10/0	11/0/0
Do. do. 3rd & 2nd	6/15/0	8/0/0
New Brunswick	6/10/0	7/10/0
Battens, all kinds	3/0/0	15/0/0
Flooring boards, sq., 1 in. prep. 1st	0/0/0	0/15/6
Do. 2nd	0/8/0	0/11/6
Other qualities—	0/4/6	0/7/6
Cedar, Cuba ..ft.	/4	/4½
Honduras, ..&c	/4	/4½
Mahogany, Cuba	/4½	/6½
St. Domingo, cargo av.	/4	1/6
Mexican do. do.	/3½	/4½
Tobasco do. do.	/3½	/6½
Honduras do. ..	/4½	/6
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio	9/0/0	20/0/0
Bahia	8/0/0	18/0/0
Satin, St. Domingo ..ft.	0/0/6	0/1/3
Porto Rico	0/0/7	0/1/6

TIMBER (*continued*).		
Walnut, Italian ..	0/0/3½	0/0/7
METALS.		
Iron—Pig, in Scotland ..ton	2/0/8	0/0/0
Bar, Welsh, in London	5/17/6	6/0/0
Do. do. at works in Wales	5/7/6	5/10/0
Do. Staffordshire, in London	6/0/0	6/10/0
COPPER—British, cake and ingot	47/10/0	48/0/0
Best selected	48/15/0	49/0/0
Sheets, strong	56/0/0	57/0/0
Chili, bars	44/7/6	44/15/0
YELLOW METAL	0/0	4 13-16 /0/5
LEAD—Pig, Spanish ..ton	9/13/9	9/12/3
English com. brands	9/16/3	9/18/9
Sheet, English, 6 lbs. per sq. ft. and upwards	11/5/0	0/0/0
Pipe	11/15/0	0/0/0
ZINC—English sheet ..ton	21/10/0	0/0/0
Vieille Montagne	22/0/0	0/0/0
TIN—Straits	93/5/0	94/15/0
Australian	93/17/6	94/7/6
English Ingots	97/0/0	97/10/0
Banca	94/0/0	94/5/0
Billiton	94/0/0	94/5/0
OILS.		
Linseed ..ton	20/0/0	20/2/6
Cocoanut, Cochin	28/10/0	0/0/0
Do. Ceylon	26/15/0	0/0/0
Palm, Lagos	30/0/0	32/10/0
Rapeseed, English pale	25/10/0	0/0/0
Do. brown	23/15/0	24/0/0
Cottonseed ref.	21/10/0	22/0/0
Oleine	23/0/0	24/0/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/10/0	12/0/0
TAR—Stockholm barrel	0/28/6	0/0/0
Archangel	0/12/6	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.*]

AMBLESIDE.—Accepted for the erection of a large room, drill hall, caretaker's house, &c., for the Directors of the New Assembly Rooms. Mr. Robert Walker, architect, Windermere:—
Arthur Jackson, Ambleside £1,909 16 0

BARNSLEY.—For the construction of a brick culvert, 3 ft. 6 in. diameter, at Whinny Nook, for the Town Council. Mr. J. Hy. Taylor, C.E., Borough Surveyor, St, Mary's-place, Barnsley:—
Higham & Porter £182 11 4
John Hood 108 0 0
Henry Burrows & Son, Park-road, Barnsley* 101 2 0
* Accepted.

BARNSLEY.—Accepted for the erection of cemetery chapel and lodge, Hemingfield, for the Wombwell Local Board. Mr. John Robinson, Surveyor, Local Board Offices, Wombwell, Barnsley:—
Excavator, Mason, and Bricklayer.—William Broadbent, Wombwell, Barnsley £1,323 0 0
Carpenter and Joiner. — Charles Linford, Wombwell, W. Barnsley 249 0 0
Tiler.—C. Kemp, Swinton, Rotherham 58 0 0
Plasterer.—P. Holdsworth, Bradford 26 10 0
Plumbing, Glazing, and Painting.—Snowden & Son, Wombwell 59 7 6

BEDDINGTON (Surrey).—For new hygienic bakery at Old Wandle Mills, Beddington, Surrey, for Messrs. J. & T. H. Wallis. Mr. Horace T. Bonner, architect, 29 and 30, King-street, Cheapside, E.C.:—

Dawson & Son	£774 12	Burnand	£675 0
Smart	758 10	Trappitt & Batley	672 0
Humphries	698 0		

BELFAST.—Accepted for the construction of a sewer in Falls-road and Divis-street, for the Corporation. Mr. J. C. Bretland, City Surveyor, Belfast. Quantities by Mr. W. H. Stephens, Donegall-place, Belfast:—
Workman & Co., 108, Ann-street, Belfast £3,039 0 0

BOURNEMOUTH.—For the supply and delivery of cast-iron pipes and other specials for Bournemouth Pier outfall, in connexion with the new main sewers, for the Borough of Bournemouth. Mr. W. Lacey, A.M.Inst.C.E., Borough Engineer and Surveyor:—
48-in. Pipes.

Macfarlane, Strang, & Co.	£3,721 9 1	Cochrane, Grove, & Co.	£2,608 16 8
E. Howell	3,017 11 6	C. Jordan & Sons ..	2,529 10 9
D. Y. Stewart & Co.	2,963 10 8	James Oakes & Co.	2,431 13 4
Stockton Forge Co.	2,746 0 0	Staveley Coal & Iron Co.*	2,389 16 7
Stanton Ironworks Co.	2,661 1 10	Steel Pipe Co. (informal)	—
J. & S. Roberts, Ld.	2,640 3 5		
Cochrane & Co.	2,609 9 4		

* Accepted.

36-in. Pipes.

Macfarlane, Strang, & Co.	£2,589 3 8	Cochrane & Co.	£1,837 14 5
E. Howell	2,203 9 0	J. & S. Roberts, Ltd.	1,775 4 8
D. Y. Stewart & Co.	2,047 4 11	Cechrane, Grove & Co.	1,764 6 11
Stockton Forge Co.	1,909 6 10	C. Jordan & Sons..	1,748 6 11
Stanton Ironworks Co.	1,845 16 4	James Oakes & Co.	1,695 16 0
		Staveley Iron Co.*	1,670 3 10

* Accepted.

BOURNEMOUTH.—For works in connexion with the new main sewers for the Borough of Bournemouth. Mr. F. W. Lacey, Borough Engineer and Surveyor:—
Bournemouth Outfall.

H. J. Sanders	£5,600 0 0	W. Swales*	£3,197 10 9
W. Hill & Co.	4,651 0 0		

* Accepted.

Boscombe Outfall.

H. J. Sanders	£4,200 0 0	W. Swales*	£1,892 11 6
W. Hill & Co.	2,314 0 0		

* Accepted.

Wimbourne-road Sewer.

Brown Bros.	£2,449 0 0	B. Cooke & Co.	£1,750 0 0
W. H. Saunders & Co.	2,076 0 0	Bradshaw & Co.....	1,491 12 6
H. J. Sanders	1,920 0 0	F. Reeks (accepted)	1,316 10 0

Main Sewers, Eastern District.

	Iron. 4 months.	Iron. 3 months.	Brick. 4 months.	Brick. 3 months.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brown Bros.	4,634 0 0	—	4,632 0 0	—
H. J. Sanders	4,284 0 0	—	4,284 0 0	—
B. Cooke & Co. ..	3,934 0 0	*4,134 0 0	4,034 0 0	4,232 0 0

* Accepted.

Main Sewers, Central District.

	Iron. 4 months.	Iron. 3 months.	Brick. 4 months.	Brick. 3 months.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Brown Bros.	9,239 0 0	—	8,989 0 0	—
H. J. Sanders	7,990 0 0	—	7,990 0 0	—
B. Cooke & Co. ..	7,500 0 0	*7,800 0 0	7,434 0 0	7,734 0 0

* Accepted.

BOXMOOR (Herts).—For extensions, &c., to St. John's Church, for the Vicar and Churchwardens. Mr. T. Foster Woodman, architect, St. Peter's, St. Alban's:—

Andrews & Son	£1,038	W. Sear, Hemel Hempstead*	£997
C. Miskin	1,000		

* Accepted.

BRADFORD (Yorks.).—Accepted for additions to "Northbrook Brewery," for Messrs. Joseph Hey & Co. Mr. Jas. Ledingham, architect, District Bank Chambers, Bradford. Quantities by architect:—
Mason.—Fredk. Ives, Shipley .....
Ironfounders.—J. Cliff & Co., Bradford ....
Joiners.—Rhodes Bros., Shipley .....
Plumber.—Job Wood, Bradford .....
Slater.—Thos. Nelson, Bradford .....
Plasterers.—T. Cordingley, Bradford .....
Painter.—Jno. Wallace, Bradford .....
} Tendered for from Schedules of Prices.

BRIGHTON.—For the construction of a public abattoir, Hollingdean-road, for the Corporation. Mr. Francis J. C. May, C.E., Town Hall, Brighton. Quantities supplied:—

J. T. Chappell	£7,450	J. Longley & Co., Crawley (accepted)	£6,639
P. Peters	7,360		
W. A. Field & Co.	7,140		

BRIGHTON.—For the erection of additions, &c., to electricity station, North-road, for the Corporation. Mr. Francis J. C. May, C.E., Town Hall, Brighton. Quantities supplied:—

W. Hill	£5,595 2 1	J. T. Chappell, Pimlico, S.W.*	£2,888 0 0
W. Neil	3,325 0 0		
W. A. Field & Co.	3,153 0 0	J. Longley & Co. ..	2,839 0 0

* Accepted.

BRISTOL.—For the restoration of the tower of St. Peter's Church. Mr. W. V. Gough, architect, 24, Bridge-street, Bristol. Quantities by the architect:—

J. Bastow	£1,125 0 0	Eastabrook & Sons	£808 0
W. Cowlin & Son ..	1,043 0 0	Hatherley & Carr	803 0
Jos. Blackburn	984 1 5	Geo. Humphreys	877 0
R. Wilkins & Son ..	974 0 0	W. Church, Wapping, Bristol (accepted)	874 0
A. J. Beaven	905 0 0		

BURSLEM.—Accepted for rebuilding the "Rose, Shamrock, and Thistle," Burslem, Staffs. Mr. A. R. Wood, Tunstall, architect:—
Wm. Grant, Burslem £895 0 0

BUTTEVANT (co. Cork).—For the erection of a glebe-house. Mr. W. H. Hill, architect, 28, South Mall, Cork:—
Davis Creedon, Fermoy £880 0 0

CANTERBURY.—For the erection of a cottage, Sturry-road, for the Corporation. Mr. F. Baker, Borough Surveyor, Vernon House, Canterbury:—

Bateman & Co.	£372 0 0	Towmey	£360 16 9
Gentry	365 0 0	Belsey	330 0 0
Johnson & Co.	362 12 10	Mount, Canterbury* ..	320 0 0

[Surveyor's Estimate, £350.]
* Accepted.

CANTERBURY.—For iron fencing and bullock-rails, Cattle Market, for the Corporation. Mr. F. Baker, Borough Surveyor:—

D. Forbes & Co.	£410 18 0	Drury & Biggleston, Canterbury*	£278 7 10
Cozens	323 7 10	Johnson & Co.	276 17 0

* Accepted.

CARLISLE.—For alterations to the "Caledonian" Hotel, for Messrs. Nicholson & Co. Mr. George Armstrong, architect, 45, Lowther-street, Carlisle. Quantities by the architect:—
Hope & Heward £518 0 0
William Batey (accepted) 514 0 0
[Both of Carlisle.]

DEWSBURY.—Accepted for the erection of branch stores, reading-rooms, &c., also six houses in Halliby and Brook-streets, for the Dewsbury Pioneers Industrial Society, Limited. Messrs. Holtom & Fox, architects, Westgate, Dewsbury. Quantities by the architects:—
Masons.—W. Scott & Son, Leeds-road, Dewsbury £1,900 0 0
Joiners.—Fothergill & Schofield, Batley Carr, Dewsbury 950 0 0
Plumbers.—Snowdon & Son, Ossett 188 0 0
Plasterer.—A. E. Broadbent, Vulcan-road, Dewsbury 105 0 0
Slater.—Geo. Hargreaves, Eastborn, Dewsbury 92 0 0
Painter.—C. A. Kershaw, Batley Carr, Dewsbury 54 10 0
Total 3,289 10 0

DURHAM.—For alterations to premises, 3, Saddler-street. Mr. H. T. Gradon, architect, Framwellgate Bridge, Durham:—

G. Gradon & Son	£290	F. Caldcleugh (accepted) ..	£250
J. Shepherd (withdrawn) ..	248		

[All of Durham.]

DURHAM.—For alterations to premises, 1 & 2, Silver-street. Mr. H. T. Gradon, architect, Framwellgate Bridge, Durham:—

G. Gradon & Son	£194 11	J. Whaley (accepted) ..	£147 0
F. Caldcleugh	164 0		

[All of Durham.]

DURHAM.—For alterations and additions to premises, 24, Silver-street. Mr. H. T. Gradon, architect, Framwellgate Bridge, Durham:—

G. Gradon & Son, Durham (accepted)....	£162 5	J. Perks & Son*	£160 0

* Exclusive of painting.

DURHAM.—For erecting six houses, Red Hills, Durham. Mr. H. T. Gradon, architect, Framwellgate Bridge, Durham:—

F. Caldcleugh	£1,001 0 0	F. Gibson	£893 10 0
G. Gradon & Son ..	970 15 0	W. Rhodes & Son, Trimdon*	840 0 0
W. Walton	905 3 8		
J. Whaley	900 15 0		

* Accepted.

GELLIGAER (Wales).—For the erection of thirty cottages at Bedlinog, for the Building Club. Mr. Vivian Jones, architect, Cefn Coed, Merthyr Tydvil. Quantities by architect:—

Lewis & Watkins	£158 0 0	Edward Edwards* ..	£142 10 8
T. Davis & Sons	150 0 0		

[All of Cardiff.]
* Accepted. Amounts given are per house.

GLOUCESTER.—For the erection of new post-office, Gloucester. Mr. J. P. Moore, architect, 9, Berkeley-street, Gloucester:—

D. C. Jones & Co.	£1,050 0	William Jones & Sons, Gloucester* ..	£960 0
Enoch Clutterbuck ..	1,012 0	William Williams†	766 10

* Accepted. † Withdrew.

GLOUCESTER.—For the erection of new shop, for Mrs. Brown, Eastgate, Gloucester. Mr. J. P. Moore, architect, 9, Berkeley-street, Gloucester:—

D. C. Jones & Co.	£1,597	Enock Clutterbuck, Gloucester (accepted)	£1,408
Wm. Williams	1,588		

GLOUCESTER.—For the erection of new offices and works for the *Citizen* newspaper, Gloucester. Mr. J. P. Moore, architect, 9, Berkeley-street, Gloucester:—

Wm. Williams	£878 10	D. C. Jones & Co., Gloucester (accepted).....	£789 0
Enock Clutterbuck.....	830 0		
Jones & Freeman	798 0		

HATFIELD.—For repairs and alterations to Apsley House, near Hatfield. Mr. E. A. Heffer, architect:—

Whitfield	£185 10	C. Driver, Primrose-hill*	£159 5
Hines & Co.	172 0		

* Accepted.

HEADINGLEY (Yorks).—Accepted for the erection of palm-house, Wheatfield Lodge, Headingley, for Mr. Joseph Nicholson. Mr. T. Butler Wilson, architect, Leeds:—
W. D. Richardson & Co., Darlington £427 13 3

LEEDS.—Accepted for the erection of two houses, Wesley-road, Armley, for Mr. W. Brogden. Mr. F. W. Rhodes, architect, Upper Wortley, Leeds:—
Mason, &c.—James Binns, Leeds £286 10 0
Joiner.—Austin Tingle, Wortley 185 0 0
Plumber.—John Hoyle, Wortley 84 10 0
Plasterers.—Brown & Brook, Armley 62 0 0
Slaters.—Pickles Bros., Leeds 21 15 0

LEIGH (Lancs.).—Accepted for the execution of various works in connexion with the town water supply, for the Rural Sanitary Authority. Mr. C. L. Whitehead, C.E., Union Offices, Leigh, Lancs. Quantities supplied:—
Hy. Baxendale, *Contracts 1, 2, 3, and 4* £1,275 0 0
Contract No. 5.
Hy. Baxendale ..... 18. 7d per ton.

LONDON.—Accepted for laying down about 23,000 yards of wood pavement for the Vestry of St. George, Hanover-square. Mr. G. Livingstone, Surveyor, 1, Pimlico-road, S.W.:—
Improved Wood Pavement Co., 46, Queen Victoria-street, E.C.

	6-in. Blocks.	5-in. Blocks.
Albemarle-street and part of Grafton-street		
Curzon-street (part of)		
Clarges-street and Curzon-street (part of)	9s. 8d. ..	9s. od.
Duke-street		
Maddox-street		
Buckingham Palace-road*	8s. 2d. .	7s. 6d.
Cliveden-place	9s. 8d. .	9s. od.
Vauxhall Bridge-road (part of)	9s. 10d. ..	9s. 2d.

* This carriageway is paved with granite pitching; all the other streets are macadamised.

LONDON.—Accepted for additions to the mortuary, Cambridge-street, for the Vestry of St. Pancras. Mr. Wm. Nisbett Blair, Engineer and Surveyor:—
H. G. Davenall £430 0 0

LONDON.—For refitting the water-closets in connexion with the Hanover-street School, Islington, with stoneware troughs and automatic flushing tanks; and for relaying the whole of the drains, for the School Board for London. Mr. T. J. Bailey, Architect:—

Williams & Son	£943	McCormick & Sons	£855
Houghton & Son	895	Knight & Son, Tottenham*	785
Grover & Son	884		

* Accepted by the Works Committee.

LONDON.—For converting a portion of the old factory building on the site in Holmes-road, Kentish Town, for the purposes of a laundry centre, for the School Board for London. Mr. T. J. Bailey Architect:—

Kirby & Chase	£333	C. Cox	£217
Cowley & Drake	265	Houghton & Son, Stroud Green*	185
McCormick & Sons	224		

* Accepted by the Works Committee.

LONDON.—For the erection of a cookery centre in connexion with the Raywood-street School, Battersea, and for executing various works to the existing buildings, for the School Board for London. Mr. T. J. Bailey, Architect:—

B. E. Nightingale	£864	Lathey Bros.	£689
J. Shillitoe & Sons	820	Hart Bros.	689
James Smith & Sons	758	Holloway Bros.	671
J. Wilmott & Sons	739	J. Tyerman, 220, Walworth-road*	647
Treasure & Son.....	736	Holliday & Greenwood....	577
F. J. Coxhead.....	703		
J. Marsland	695		

*Recommended for acceptance by the Works Committee.

LONDON.—For alterations at the "King Charles II.," Lamb-street, Spitalfields, for Mr. Ballard. Mr. Edward Brown, architect, 5, Elder-street, Norton Folgate:—

W. J. Walker	£264	J. V. Kiddle & Son (accepted)	£199
S. W. Hawkings.....	235		

LONDON.—For repairs and painting at 102 and 104, Queen Victoria-street, E.C., for the Aberdeen Steam Navigation Company. Mr. George Judge, architect:—

Henry W. Say	£348	Spencer & Co.	£315
T. H. Mansfield & Son	339	John Kirkaldy & Son	305
Josolyne & Young	317		

LONDON.—For additions to No. 108, High-street, Deptford. Mr. Lawton R. Ford, architect, St. Thomas' Chambers, London Bridge, S.E.:—

S. Kipps	£511	J. Bullers	£458
Laws & Son.....	490	White & Co.	457
J. Marsland	483	Pritchard & Renwick*	447

* Accepted.

LONDON.—Accepted for completion of premises, 117 and 119, Kensington High-street, W. Mr. J. Wallis Chapman, architect. Quantities by Mr. H. T. A. Chidgey:—
F. & F. J. Wood £5,893 0 0

LONDON.—For mahogany porters' box, &c., at Billiter Buildings, E.C. Mr. F. H. Holdsmith, architect:—
J. H. Greenwood £120 0 0
C. L. Cole, Park-road, Canal-road, E. (accepted) 118 0 0

LONDON.—For general repairs and redecorating the Queen Adelaide Dispensary, Bethnal Green. Mr. Jackson, architect:—

Everard	£669	Thomerson & Son	£479
G. W. Beale	587	Jarvis & Sons	445
G. E. Tod	573		

NEWBURY.—For new retort-house, &c., for the Newbury Gas Works Company:—

James.....	£789	Head, Burghclere*	£779
Bauce	780		

* Reduced to £760 and accepted.

NEWTON ABBOT.—For the erection of eight additional almshouses, for the Trustees of Mackrell's Charity, at Newton Abbot. Messrs. J. W. Rowell & Son, architects, Newton Abbot. Quantities supplied:—

Parker Bros.	£4,100 0 0	Rundle Bros.	£3,873 0 0
F. Zealley	4,050 0 0	F. A. Stacey	3,777 0 0
L. Bearne	3,900 0 0	Rabbich & Brown, Paignton*	3,682 0 0
C. Stevens.....	3,887 17 6		

* Accepted.

PAIGNTON (Devon).—For making extensive alterations and additions to the pavilion-pier, for the Paignton Pavilion and Promenade Pier and Torquay Steamboat Co., Limited. Mr. Bridgman, architect, Paignton:—

Rabbich & Brown.....	£620	Samuel Hawkins	£520

PLUMSTEAD COMMON.—For alterations to the "Old Mill" public house, for Mr. G. W. Lambert. Mr. W. Seckham Witherington, architect, 33, Great Tower-street, E.C.:—

Spencer & Co.	£725 0	A. Hutton	£649 0
Bostin & Tawney	668 15		

PORTSMOUTH.—For building new show and work-rooms, and altering existing premises, for Mr. J. Bullpitt. Messrs. Rake & Cogswell, architects, Portsmouth:—

J. Croad	£2,082 11	J. Crockerell	£1,921 0
Light & Son	2,060 0	C. Harding.....	1,867 0
J. H. Corke	1,949 0	C. H. Roberts*	1,791 0
T. P. Hall	1,928 0		

* Accepted.
[All of Portsmouth].
[Architects' Estimate, £1,878 0 0].

RYE.—For the construction of two reservoirs to hold 75,000 and 50,000 gallons of water respectively, engine-house, &c., for the Town Council. Mr. Charles Smith, Engineer, Rye :—

Durden	£1,244	Weldon	£982
Johnson	1,160	Meats	946
Comport	1,114	Marchant	844
Nunn	1,106	Piper, Hastings (accepted)	809

STONEHOUSE (Gloucester).—For the erection of "subscription" rooms. Mr. J. P. Moore, architect, 9, Berkeley-street, Gloucester :—

Beavis	£1,280	Wheeler	£1,025
Wall & Hook	1,250	Mastin	978
Blick	1,160	T. G. Ditt, Ebley, Stroud, Gloucester (accepted)	960
English & Son	1,133		

STROUD.—Accepted for the erection of sanatorium, Marling Schools, Stroud, Gloucester. Mr. J. P. Moore, architect, 9, Berkeley-street, Gloucester :—

Stephen Cox, Lighthill, Stroud (accepted) £430 0 0

SWINDON.—For alterations and additions at the works of the Swindon Gas and Coke Co., Lim. Mr. W. H. Read, architect, Corn Exchange, Swindon :—

Beale	£797 15 0	Williams	£513 16 7
Barrett	538 1 0	Wiltshire, Swindon*	413 0 0
Malvern & Son	527 0 0		

* Accepted.

TOTTENHAM.—For the erection of three houses for Mr. J. Bowden. Mr. W. A. Finch, architect :—

Barret & Power	£1,770	Pappin'	£1,383
Porter	1,500	Thomerson & Son	1,349
Goodhall	1,497	Bruce & Middleton	1,150

TUNSTALL (Staffs).—Accepted for the enlargement of Christ Church Schools. Mr. A. R. Wood, Tunstall, architect :—

Chas. Cope, Tunstall £475 0 0

WEYMOUTH.—Accepted for the erection of a villa residence at Rodwell, for Mr. A. R. Curtis. Mr. S. Jackson, architect :—

A. J. Masterman, Weymouth £1,244 12 8

WOOLHAMPTON.—For the completion of St. Mary's College, Woolhampton, near Reading, Berks. Mr. Frederick A. Walters, architect, 4, Great Queen-street, Westminster. Quantities by Mr. John B. Lofting :—

E. P. Bulled	£7,250	W. R. & C. Light	£6,169
J. Smith & Sons	6,591	Bottrill & Son	6,090
T. Gregory & Co.	6,397	Goddard & Sons	5,993
W. Rhind & Son	6,345	J. Longley & Co.	5,895
F. G. Minter	6,287	J. Buckle	5,611

SWINDON.—For the erection of club premises, for the Gorse Hill Workmen's Club. Mr. R. J Beswick, architect, Fleet-street, Swindon :—

George Wiltshire	£1,760 0	Colborne	£1,635 0
Wm. Beale	1,724 0	Wm. Chambers	1,599 0
W. H. Ford	1,695 0	C. Williams, Swindon*	1,527 7

*Accepted.

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1893.

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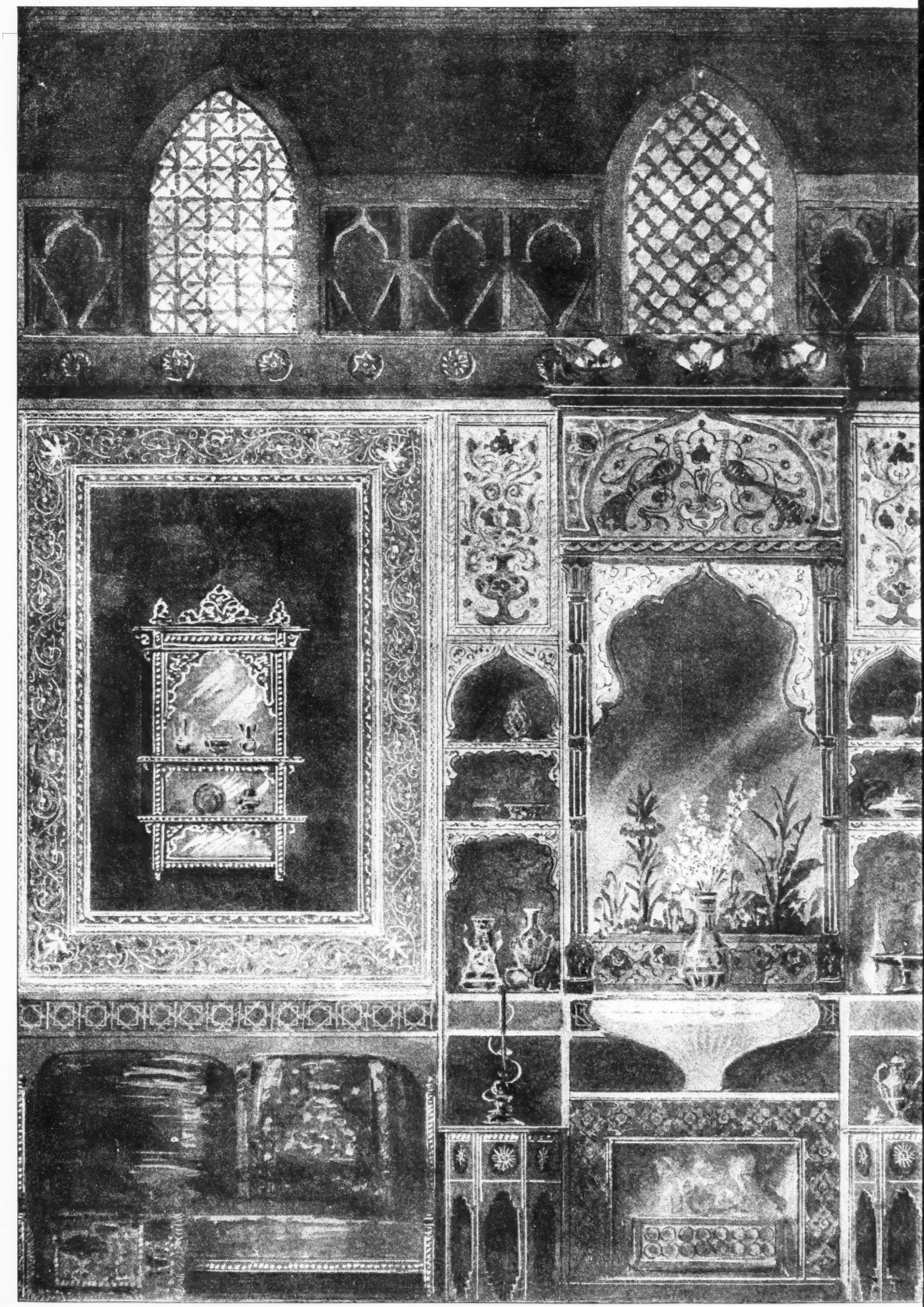

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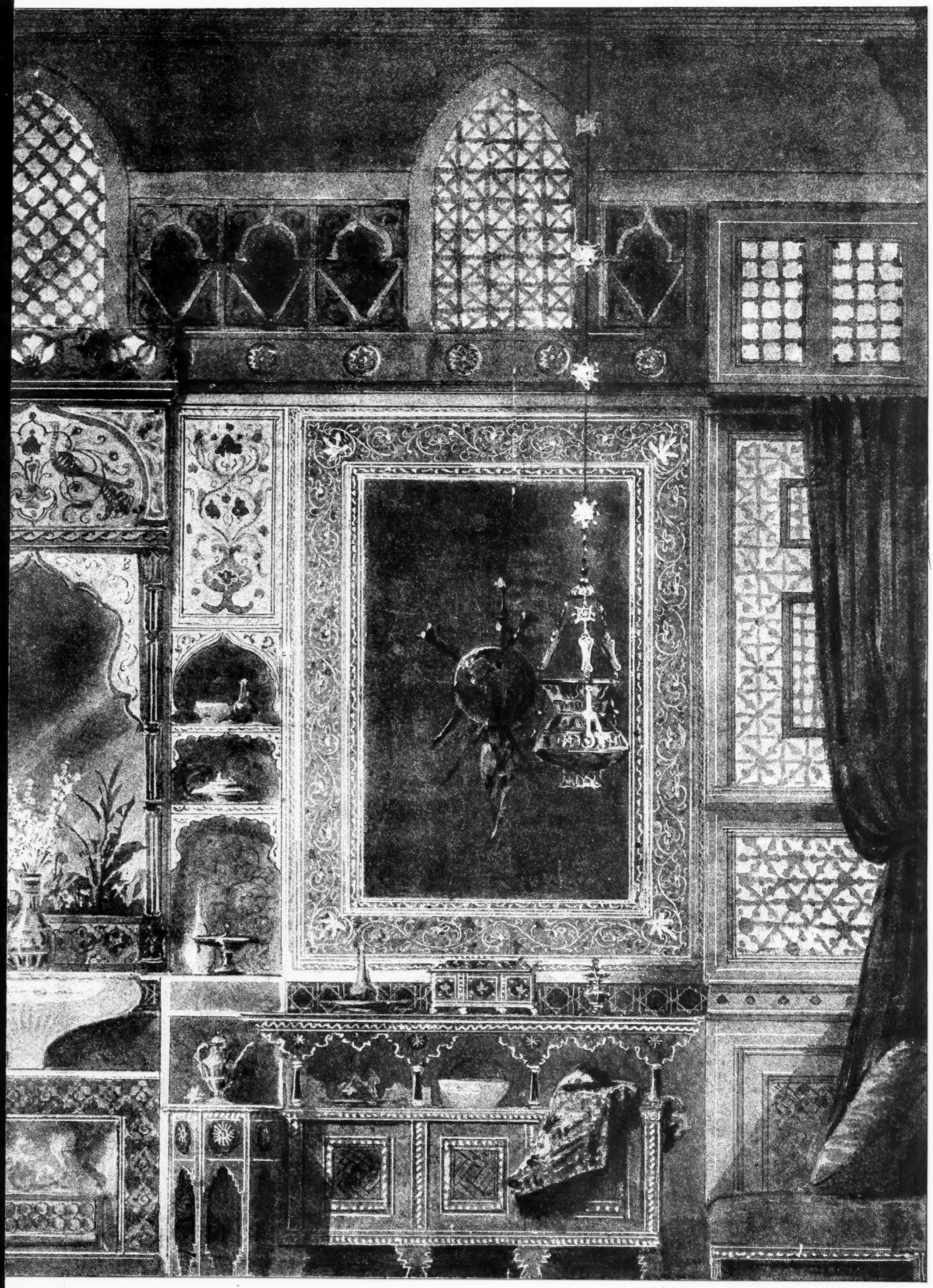

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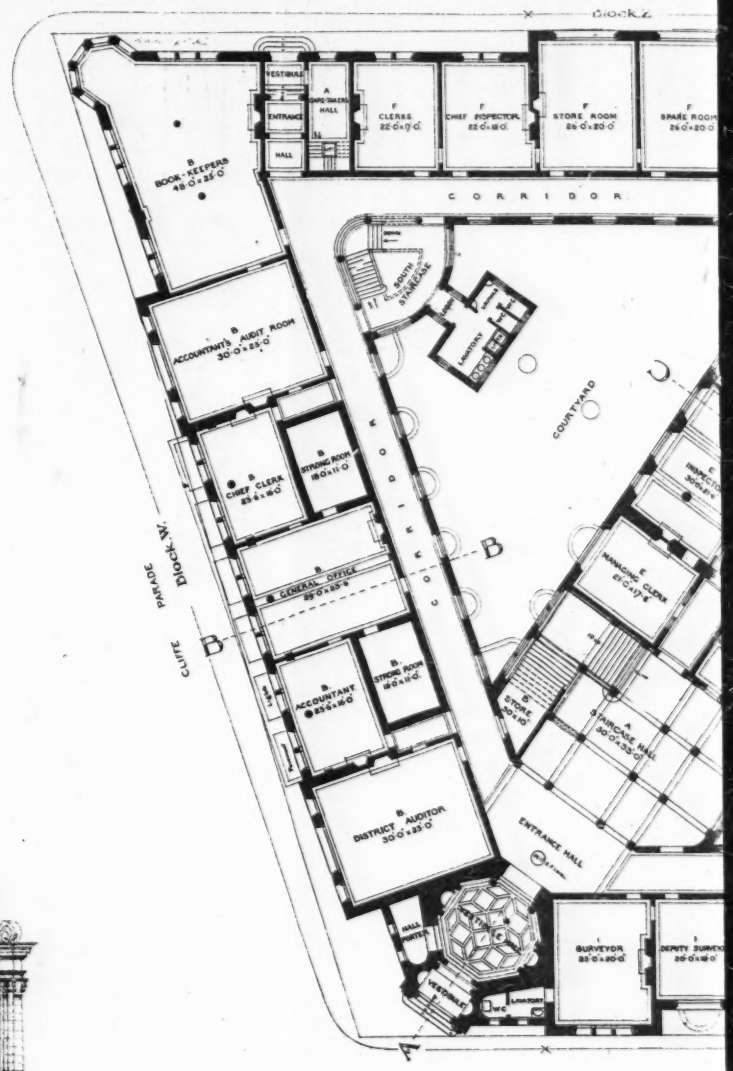

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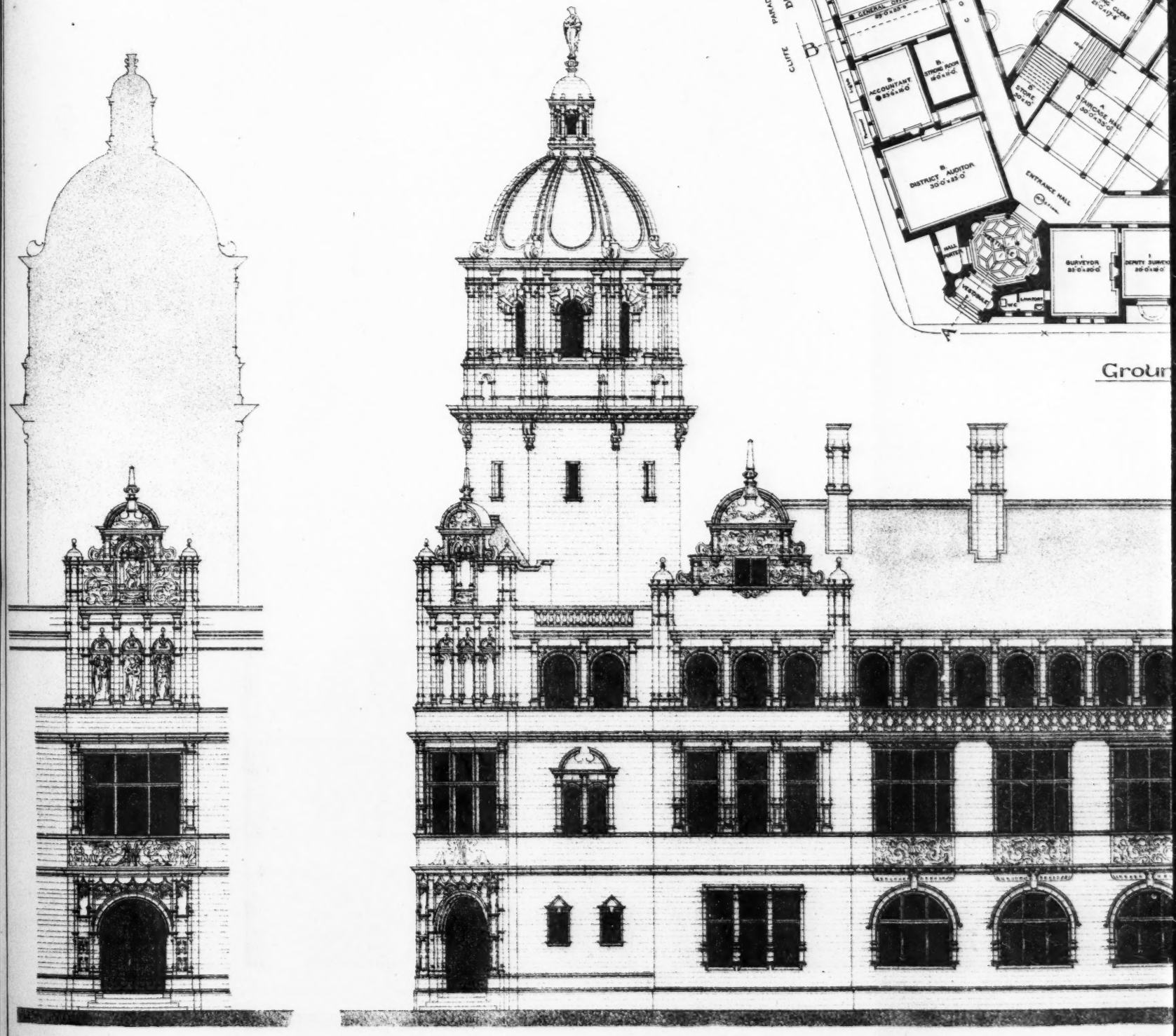

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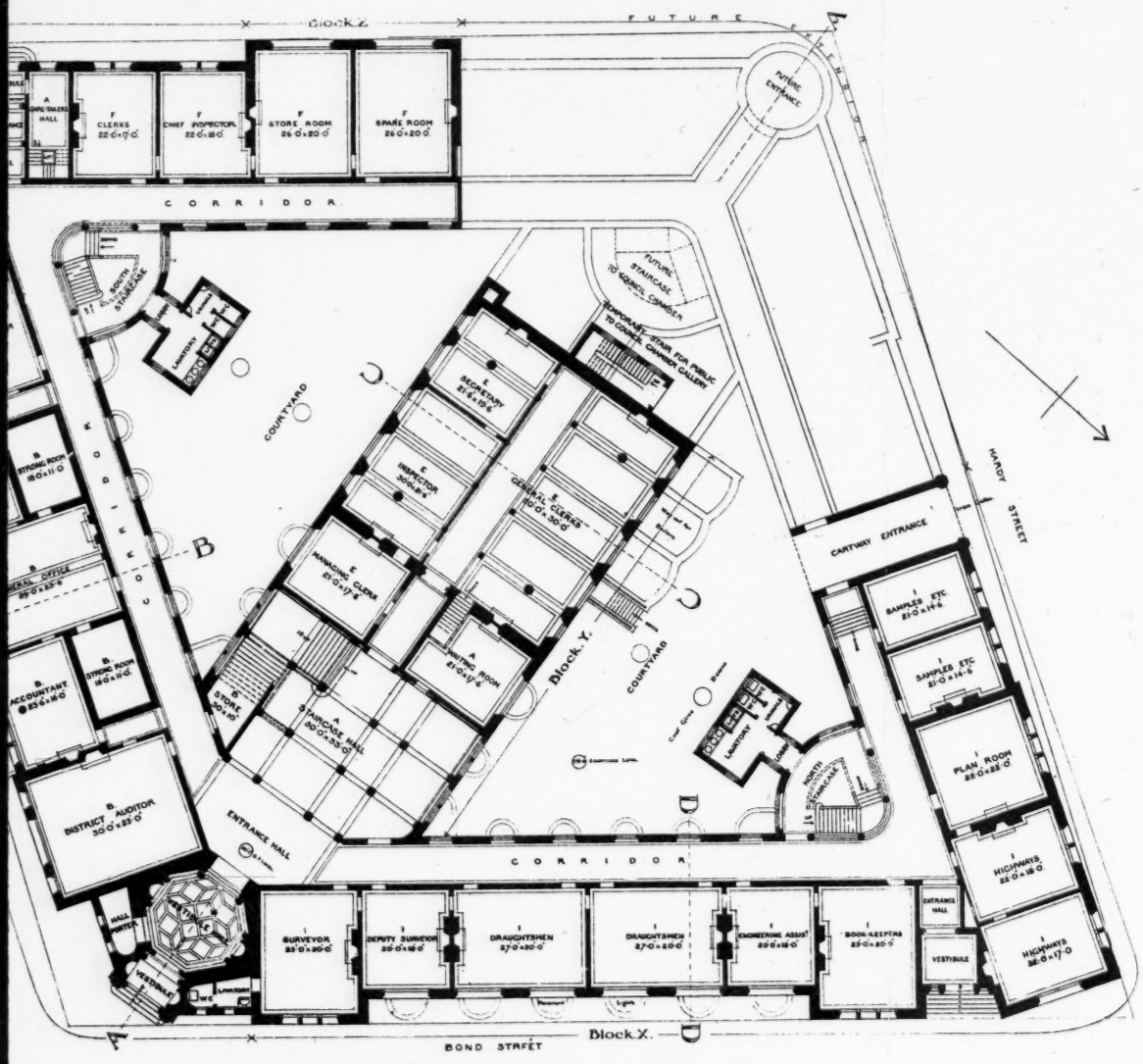
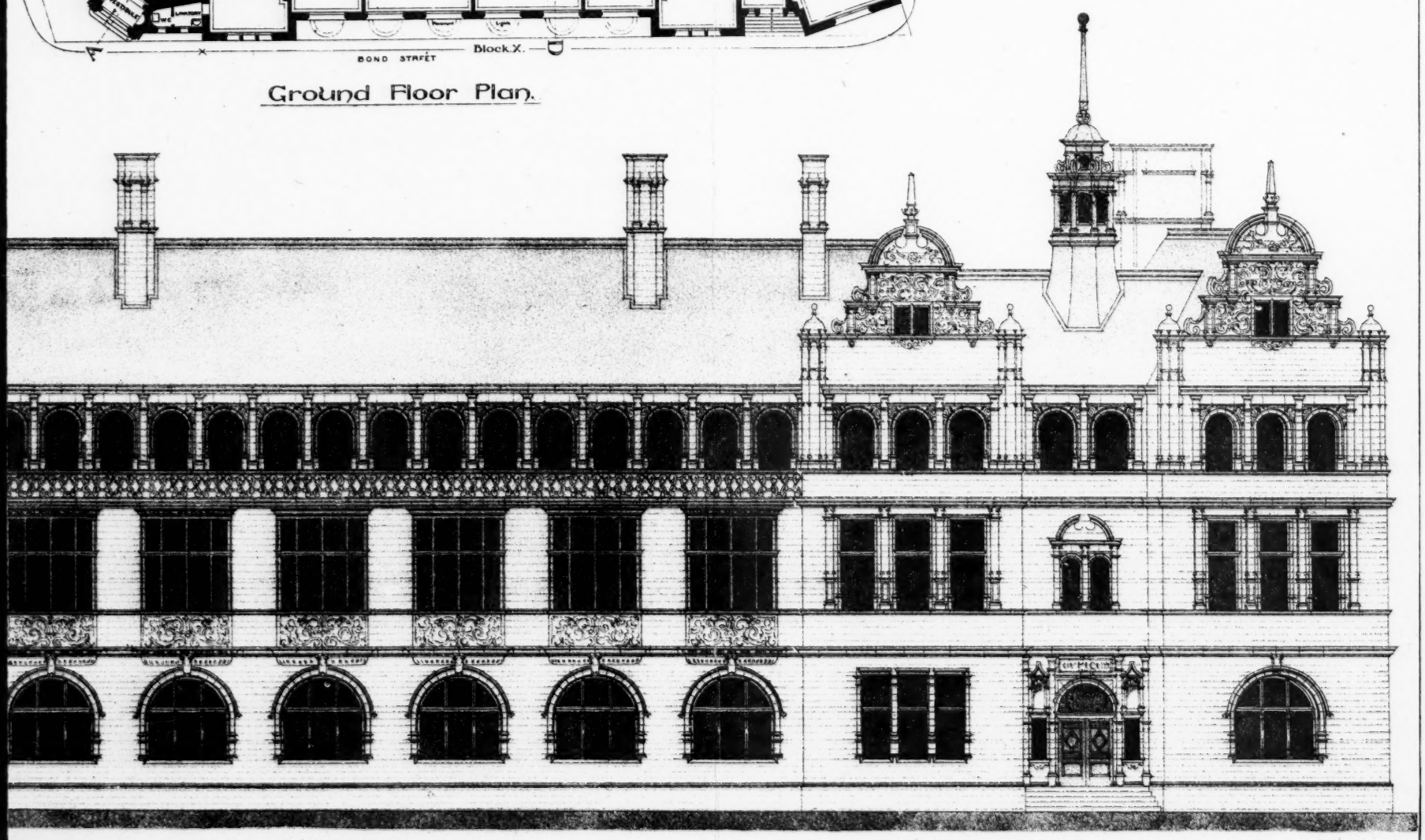


Ground Floor Plan.



ELEVATION TO BOND STREET.

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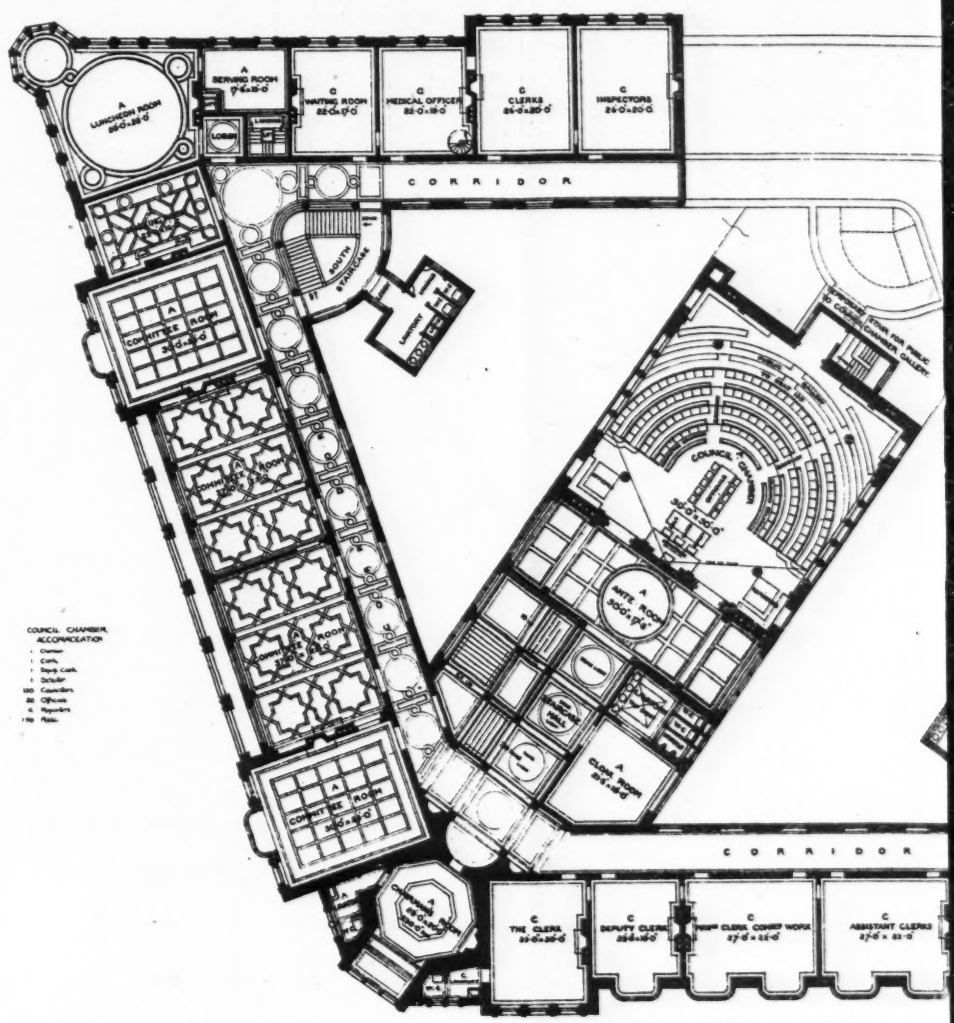
A LUNCHEON ROOM 26'0 × 26'0
A SERVING ROOM 17'6 × 15'0
C WAITING ROOM 22'0 × 17'0
C MEDICAL OFFICER 22'0 × 15'0
C CLERKS 24'0 × 20'0
C INSPECTORS 24'0 × 20'0
CORRIDOR
SOUTH STAIRCASE
A COMMITTEE ROOM 34'0 × 24'0
A COMMITTEE ROOM 30'0 × 24'0
A COMMITTEE ROOM 30'0 × 24'0
A COMMITTEE ROOM 30'0 × 24'0
COUNCIL CHAMBER ACCOMMODATION
A COUNCIL CHAMBER
A WAITING ROOM 30'0 × 24'0
A CLERK ROOM 22'0 × 24'0
CORRIDOR
A REGISTRAR'S ROOM
C THE CLERK 22'0 × 20'0
C DEPUTY CLERK 22'0 × 15'0
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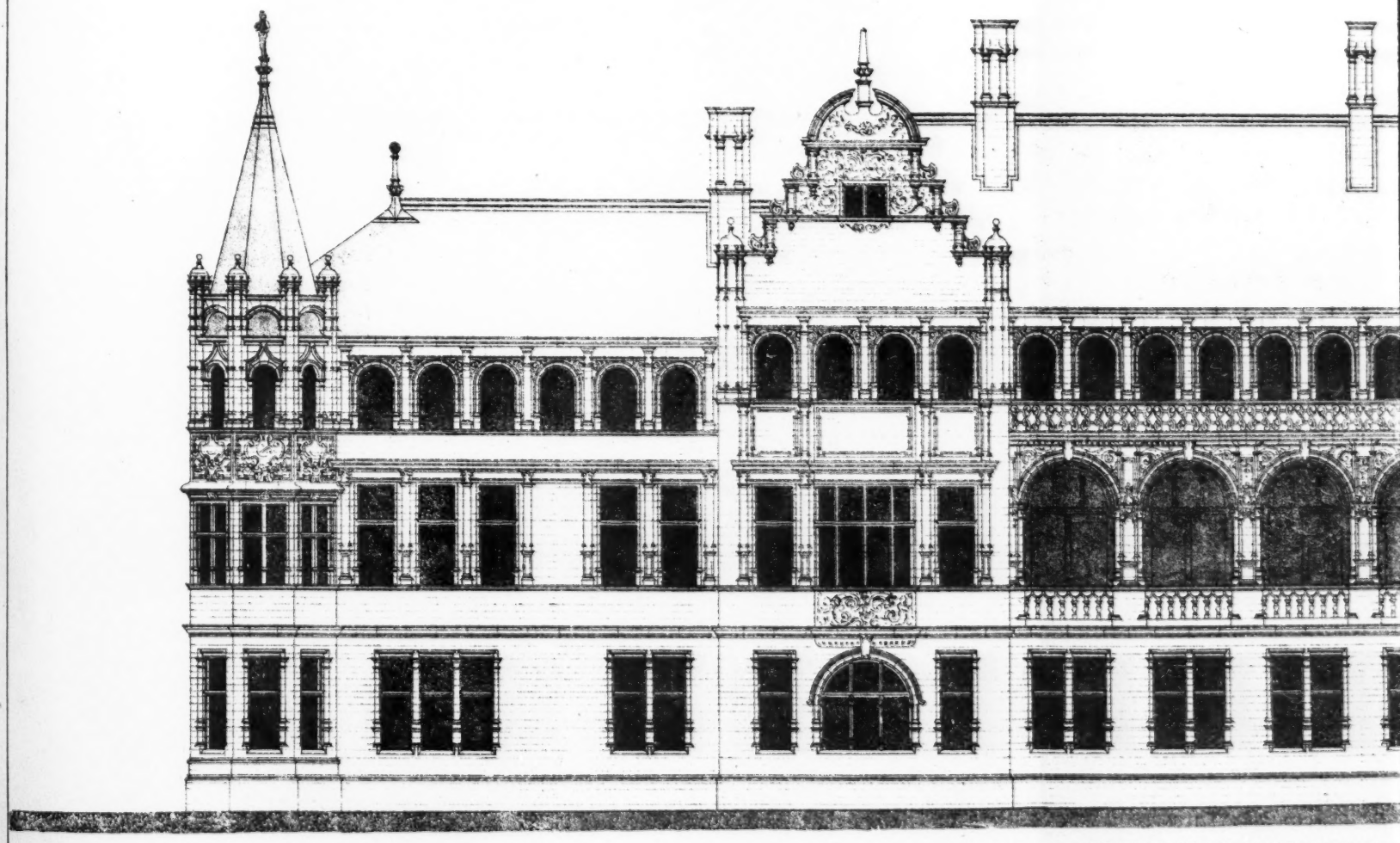
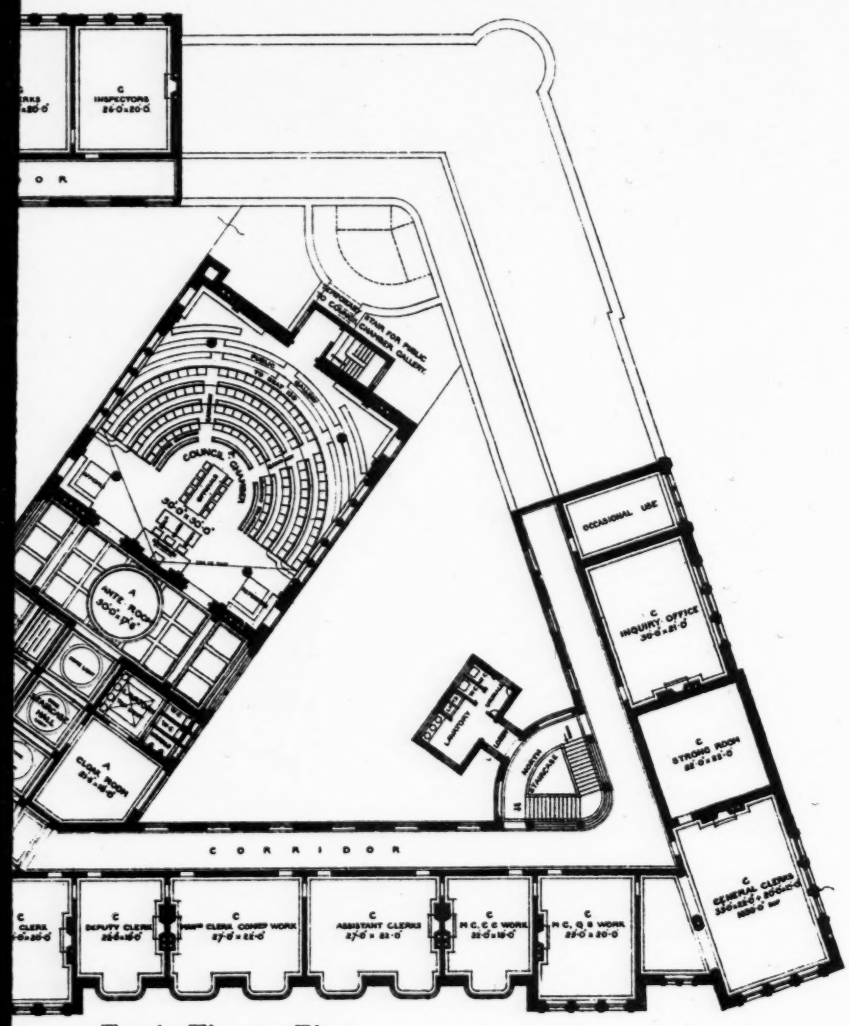
C ASSISTANT CLERKS 27'0 × 22'0

First Floor Plan.

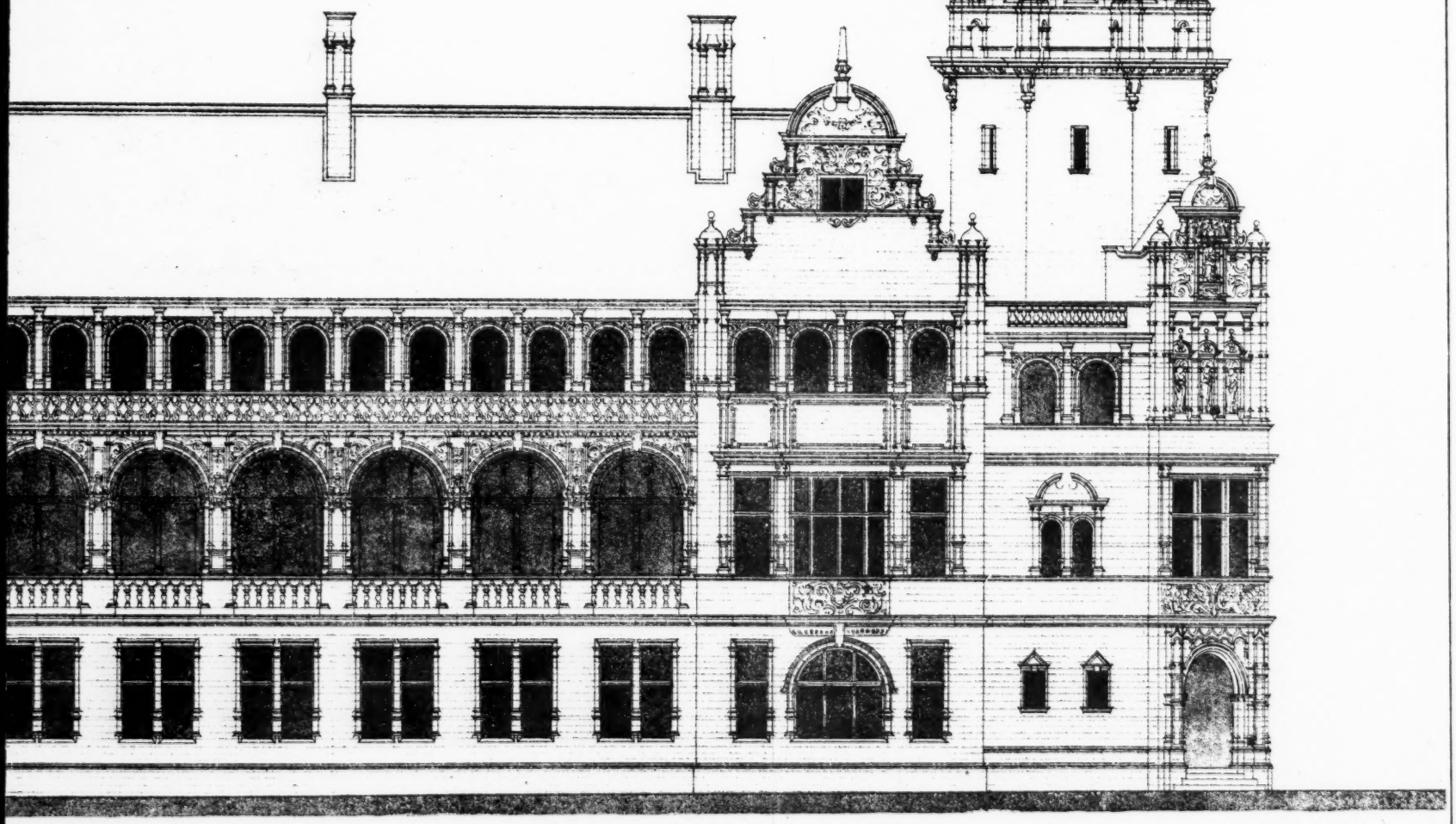


ELEVATION TO CLIFFE PARADE.

SELECTED DESIGN FOR THE WEST RIDING COUNTY COUNCIL OFFICES AT



First Floor Plan.



ELEVATION TO CLIFFE PARADE.

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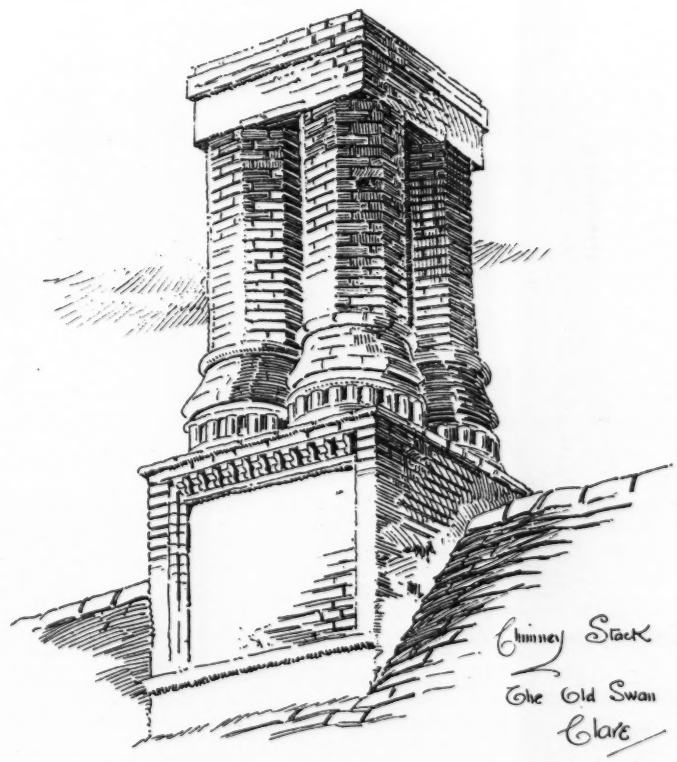
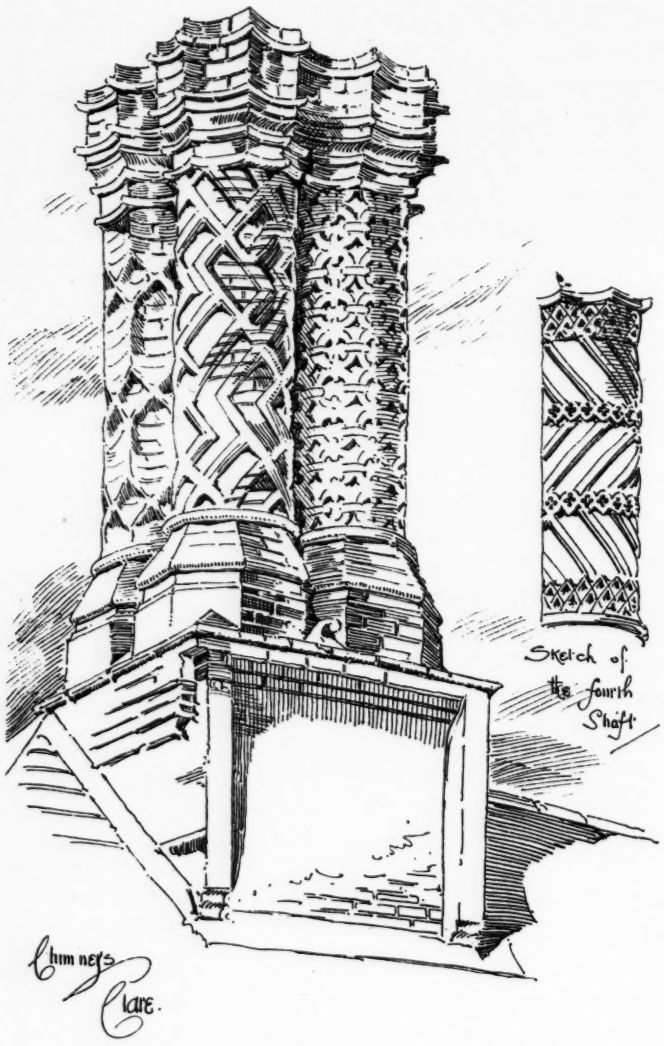


Chimney Stack

The Old Swan

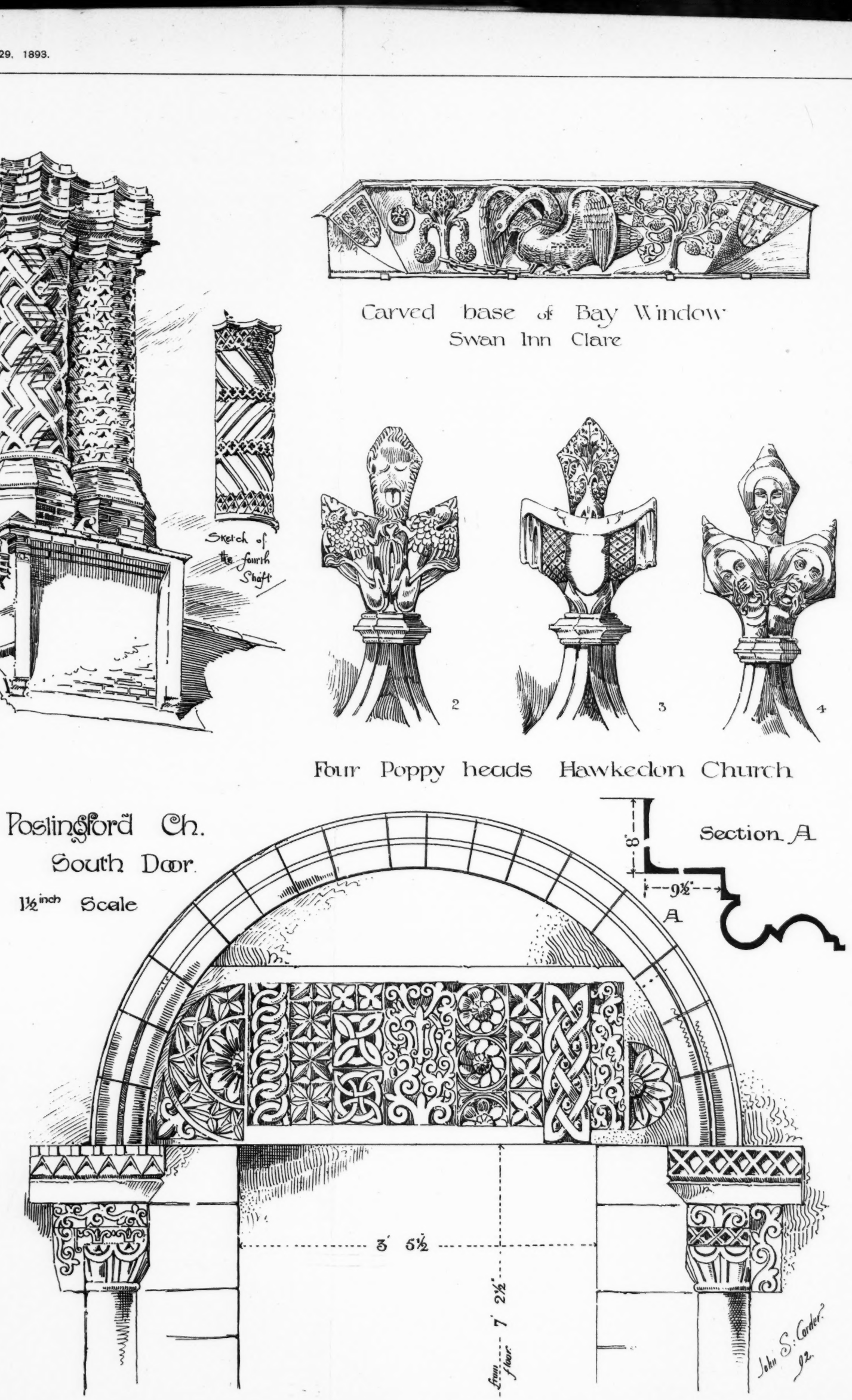
Clare

J.S.C 92



Carved base of Bay Window
Swan Inn Clare

Four Poppy heads Hawkedon Church



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